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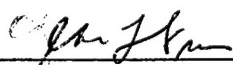
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## **I. Introduction**

The purpose of this study was to examine the correlates of mammography screening in older Mexican-American women, with a focus on how family relationships are related to screening behavior. A random sample of 549 Mexican-American women age 50-74 years in southeast Texas was identified through a one stage cluster sample. Data were collected on 452 subjects through in-home interviews on factors related to ever having a mammogram and having had a mammogram in the past two years. The survey instrument included questions that measure subjects' health status, level of acculturation, socio-demographic characteristics, knowledge and beliefs about breast cancer and mammographic screening, family networks and relationships, living arrangements, preventive health practices, access to medical care, and insurance coverage. Self reports of mammograms were compared to medical records in a validation sub-study.

## **II. Research Accomplishments**

The statement of work included: 1) surveying a population based sample of older Mexican-American women on their use of mammography services; 2) evaluating the survey in terms of coverage, screening and interview rates; 3) constructing a data base of information from the interviews; 4) testing hypotheses about correlates of mammography use; and 5) validating mammography self-reports through a comparison with medical records. Research with respect to these tasks is described in this section.

### **II.1 Survey of Mexican-American Women**

#### Study Population

Our study population consisted of Mexican American women age 50-74 years who resided in three southeast Texas counties: Galveston, Brazoria, Matagorda. The three counties stretch for 140 miles along the Gulf of Mexico and up to 100 miles from Houston in Harris county (Figure 1, Appendix 1). All three counties are designated non-metropolitan counties by the U.S. Bureau of the Census and are considered rural for health care delivery issues within the state [1]. Defined by the percent of persons living in rural areas, however, the degree of rurality varies from about 6 percent in Galveston County to 39 percent in Matagorda County. The counties also differ in the percent of their population reporting Mexican American ethnicity in the 1990 Census, from 12 percent for Galveston to 23 percent for Matagorda (Table 1, Appendix 1). The Hispanic population (which is largely Mexican American) in all three counties has roughly half the educational attainment and income of the non-Hispanics. In Galveston, the number of primary care physicians per 10000 population is 6.6, which is close to the ratio for the entire state (6.0) [1]. The ratio is lower for Matagorda (5.3) and Brazoria (3.8) counties.

## Sample Design

The goal of the survey was to obtain a representative sample of the Mexican American women 50-74 years of age residing in blocks or block groups of Brazoria, Galveston, and Matagorda counties. Described below are the procedures we used to 1) estimate the required sample size and 2) select the sample with data at the block group level from the Bureau of the Census.

### Estimating the Sample Size:

The study required that we estimate the prevalence of mammography among Mexican American women ages 50 and over. Previous studies suggested rates as high as 30 percent and as low as 10 percent. Table 2 (Appendix 1) shows the sample sizes required for 90 and 95 percent confidence intervals of width 10 percent. We wanted to have an 80 percent probability of covering the true prevalence rate, which is analogous to power in hypothesis testing. Calculations were done using the program PC-SIZE [2]. This means that if 30 percent of Mexican American women in the survey area have had a mammogram, then a sample of 349 interviewed women would generate a 95 percent confidence interval of length 10 percent which contains 30 percent 80 percent of the time. Put differently, if we interviewed 248 women we would be 90 percent confident the resulting interval from, for example, .25 to .35 will contain the true underlying mammography rate 80 percent of the time. The second major column of Table 1 reflects an adjustment for an 80 percent response rate and a 25 percent design effect due to cluster sampling. These adjustments inflate the required sample sizes by 56.25 percent. Thus we needed to identify 616 Mexican American women aged 50-74 to obtain the equivalent of a simple random sample of 394.

Given an approximate combined sample of nearly 400 women we then projected the probability of detecting significant predictors of mammography. In Table 3 (Appendix 1) various combinations of predictor distributions are shown for at least 80 percent power, two sided alternative ( $\alpha=0.05$ ), and a base screening rate of .25. We only considered predictor distributions which sum to 400, e.g. 100 and 300 (or less). Thus a shift from a screening prevalence of .25 to .4 will be detected with 80 percent probability for predictors which split 300 versus 100, such as the poverty variable. A shift of .2 could be detected for variables as small as 100 per level with 85 percent probability. With a sample of 322 with a 40 percent positive rate a shift in screening of 15 percent again has an 80 percent power.

Our intent was to measure the nature and level of family contacts through the survey using social support and familism scales from other investigators, such as the familism scale developed by Sabogal et. al. [3], and the associational, affectual and reliance scales used by Markides [4]. These were all quantitative scales with standard deviations smaller than those of the prevalence rates. Hence, the confidence intervals would be smaller.

### Selecting the Sample:

The 1990 census indicated that the target population contained about 3760 women (Table 4, Appendix 1). Available block group (BG) data indicated that these women were contained in a population of <5760 Hispanic females ages 50-74. The target counties contained 191,541 housing units of which 82% were occupied. Our budget allowed for listing and enumerating 12,000 housing units to obtain a sample of 600 Mexican American women age 50 to 74. The objective of the sample design was to identify a random sample within the constraint of listing and enumerating 12,000 housing units.

The first step was to determine the density of Hispanic women 50-74. Block group data allowed us to classify block groups according to the ratio of: 1) total of Hispanics, 2) total Mexican-Americans and 3) Hispanic (but not Mexican-American) women 50-74 to the number of housing units. Block data does not provide information on 1) the number of total Mexican-Americans and 2) the number of Hispanics or Mexican-Americans by gender or age. Therefore, we estimated the number of eligible Mexican-American women in our sample based on the proportion of total Hispanic women 50-74 at the block group level and total Hispanics and number of housing units at the block level.

In the second step we eliminated all blocks which have no Hispanics at the block level. This was done manually from a printout of Hispanics and housing units for each block within the three county sampling area. This reduced by about half the number of housing units containing the target population.

In the third step we determined the target segment size. A segment is a contiguous collection of housing units that are listed and enumerated. Our target sample size was 600 of which we expected an 80% response rate or a total of 480 completed interviews. There were a number of options available to determine the proportion of rural and urban sample sizes, such as over sampling rural areas to obtain equal sample sizes of 300 rural and 300 urban, fixed sizes (200 rural + 400 urban, 100 rural + 500 urban) or a proportional sample of target subjects to housing units (81 rural + 519 urban). We chose to use a proportional sample with 80% coverage of total households. This resulted in needing 430 rural subjects located in 13,326 units and 2,756 urban subjects in 52,861 units. To locate the proportion of this sample to yield 600 eligible subjects would require about 12,461 housing units, which satisfied our budget requirement.

For segment sizes, these proportions resulted in approximately 31 and 19 units to identify each eligible rural and urban subject, respectively. For practical reasons, we wanted to average 2 eligible women per segment. This suggested an average segment size of about 60 housing units.

Based on available data, an estimated number of Hispanic and Mexican-American females 50-74, the yield or number of housing units required for each eligible subject and the number of Mexican-American females 50-74 expected to be located in each segment was made at the block level.

In the final step we identified and selected the segments for enumeration. After eliminating blocks with no Hispanics, blocks were aggregated within counties, tracts and block groups. Beginning with the first eligible block, consecutive blocks were aggregated until approximately 60 housing units was reached. The corresponding number of Hispanics contained in those blocks was recorded. This resulted in the final listing of segments to be randomized for selection. As expected several blocks contained well over 60 units. These larger blocks were grouped into multiple segments that were "chunked" later if randomly chosen. For example, a block containing about 120 units would be considered 2 separately numbered segments. If one of those segment numbers was chosen, the multiple segments would be chunked to determine which housing units need to be enumerated.

All block aggregations were given a pre-specified segment number. From these a random number of segments was selected equal to the proportion of urban and rural housing units. These selected segments represented primary sample units (PSUs) to be used for enumeration and interviewing. There were 41 rural segments yielding 91 eligible subjects in 2637 housing units and 155 urban segments yielding 502 eligible subjects in 10,123 housing units. Note that since each segment and therefore each housing unit has a known probability of selection, this is a random sample of the eligible block group population.

### Questionnaire

#### Overview:

The correlates of mammographic screening were investigated in the framework of the PRECEDE-PROCEED ("predisposing, reinforcing, and enabling causes in educational diagnosis and evaluation") model [5], which incorporates concepts from Anderson and Aday's model of access to care [6] and Rosenstock's Health Belief Model [7]. It has been used in previous studies of health screening behavior [8-11]. The PROCEED framework provides the steps for implementation and evaluation.

In this study, we utilized phase 4 of PRECEDE where we examined factors that have a potential influence on mammographic screening. Numerous factors are seen to influence health behavior and PRECEDE aggregates them into three broad categories according to the strategies that might be employed to bring about change. Predisposing factors are individual attributes that motivate one to act and reflect personal preferences that serve to promote or inhibit health behavior. These include demographic characteristics such as age, and educational attainment as well as personal knowledge, attitudes, values, and perceptions of breast cancer and mammography.

Enabling factors pertain to the availability and accessibility of screening services. They are personal and community resources that enable a woman to obtain a mammogram. Enabling factors include insurance coverage for screening mammograms, income, access to transportation services, and having a usual source of health care.

Reinforcing factors are external influences that support or hinder screening behavior. They include factors antecedent to screening that may affect a woman's seeking services. Or, they may influence subsequent (routine) use of screening mammograms through reinforcement or discouragement of the behavior. The attitudes and behavior of family, friends, and health care providers are particularly important sources of reinforcement. Exposure to pamphlets and media messages that encourage breast cancer screening can also affect screening behavior.

Of particular interest in this study were the predisposing and reinforcing factors that are unique to the Mexican American population, such as level of acculturation and strong family support. The major focus of the research was determining whether these factors are associated with ever having had a mammogram and having had a mammogram in the past two years.

A questionnaire was developed that collected information on measures needed to examine the relationships among mammography use and predisposing, enabling and reinforcing factors in the PRECEDE model (see Appendix 2). This section contains a summary of the questions and scales used in the questionnaire.

#### Predisposing Factors:

Demographic information was collected on age, education, and employment status. Education was measured as highest grade or year of regular school completed. Employment status was assessed in terms of whether the subject was currently employed, a homemaker, on disability or retired.

Acculturation was measured with the Hazuda acculturation scale [12]. Separate subscales measure proficiency in English, language usage, value placed on culture, attitude toward traditional family structure and interaction with mainstream society. A composite score was generated from the items measuring English proficiency, value placed on culture and adult interaction with mainstream society.

We used the SF-36 [13] developed by the Medical Outcomes Trust to measure health status. The SF36 includes scales that measure eight dimensions of health: physical functioning, role limitation, bodily pain, social functioning, mental health, role limitations due to emotional problems, vitality, energy or fatigue and general health perceptions. Changes in self-rated health status compared to the previous year are also assessed.

The subject's attitudes about preventive care were determined from her utilization of breast self exam, breast physical exam, and yearly routine check-ups. Knowledge of screening recommendations for breast cancer and the benefits of early detection were assessed with questions on the age and frequency women should have mammograms and chances of surviving breast cancer if detected early.

Her perceived susceptibility and risk was determined from how much she worries about getting breast cancer, her family/personal history of breast cancer and whether or not friends have had breast cancer. Fatalistic attitudes were measured with Cuellar's fatalism scale [38].

#### Enabling:

Income and measures of financial strain were measured with questions on income from all sources, reported difficulty meeting monthly bills and ability to make ends meet. Information on health insurance coverage was also collected. The subject's usual source of care was determined with questions on whether or not the subject has a regular doctor, a usual source of care and the type of usual source (if any).

#### Reinforcing Factors:

Marital status was determined from the questions: Are you married, divorced, widowed or never married? For those ever married, subjects were asked the length of time they have been married, separated, divorced or married. Marital satisfaction was measured with a scale from Markides three generations study [15]. The influence of husband's health and his involvement with the subject's health was also assessed.

Finally, family networks and social supports were measured in terms of living arrangement, number of children, frequency of contact with children and Sabogal et. al.'s [3] measures of the three factors in his familism scale - familial obligations, support from the family and family as referents.

Of special interest in the study were relationships between the subject and her younger female relatives/friends and whether these relationships were associated with screening behavior. A series of questions were asked in order to identify whether the subject had any female family member, relative or close friend, 18-35 years old, who lived within a 1 hour drive. Then, if she had more than one, she was asked which one of these younger women she relied on the most for advice about health matters.

Scales from Markides' study [4] of three generations of Mexican Americans were employed to measure intergenerational association and reliance of older women on this close younger female family member/relative/close friend. The association scale measures objective interactions with questions on how often the respondent (an older woman) engages in activities with the younger woman. Sources of help between the subject and the younger woman is assessed with the reliance scale.

The influence of family members was further measured with questions regarding their involvement in the decision to have or not to have a mammogram, including whether any family members ever encouraged the subject to have a mammogram and whether she is more likely to get a mammogram if her husband or any other family member suggests she get one.

### Mammography Use:

Mammographic screening use was based on whether the subject ever had a mammogram and if so, whether she had one in the past two years. The questionnaire also collected information on the date of the subject's most recent mammogram, why she had the mammogram (health problem or not) and at what facility she received it.

### Spanish Translation of Questionnaire:

The questionnaire was initially translated by a member of the study staff (S. Black). To the extent possible, existing translations of questions that have been used in other surveys were incorporated into the initial version of the Spanish questionnaire.

This translation was reviewed by two persons whose primary language was Spanish. It was also back translated by a member of the community whose primary language was Spanish and who met the eligibility criteria of our study (Mexican-American, age 50-74). Revisions were made based the reviewers' recommendations and the results of the back translation. The revised version was pre-tested with a Spanish speaking woman (in the age range 50 to 74) from the local area. Further revisions were made based on this pre-test. A final version was constructed after the interviewer training session and field testing.

### Enumeration and Interviewing Procedures

In the first year of the study (July 1, 1996-June 30, 1997), a contract was developed and signed with Louis Harris and Associates to perform the fieldwork and data processing required for the survey. This included listing and enumerating all housing units in the sample, then interviewing eligible subjects.

Project staff at UTMB provided maps of the designated segments for enumeration. These maps included a 1990 Census map and a Delorme map. The Census maps were purchased from the Bureau of the Census. Delorme maps were created using the Delorme Street Atlas USA software program version 3.0 for Windows. These maps are generally easier to read than the Census maps and may give more detail on street names.

Each segment had an identified starting point from which the interviewer was expected to screen every household for an eligible subject. When there were sizable changes in the segment's housing stock, the map was referred back to Mr. Tony DiNuzzo or Dr. Daniel Freeman for clarification.

A subject was defined as eligible if she was female, self identified as Mexican-American and was between the ages of 50 and 74. Four attempts to screen the household in an occupied unit were made. If no one was at home during any attempt, the composition of the household was

obtained from a neighbor or city directory. For women identified as eligible, interviewers attempted an interview immediately. Otherwise, at least five attempts (including screen) were made to contact and interview the woman unless she explicitly refused.

#### Interviewer Training:

Louis Harris employed six bi-lingual, female interviewers for this study. They have had extensive experience collecting health survey data as part of Dr. Markides study on the health of elderly Mexican-Americans.

The six interviewers were brought to Galveston on June 30, 1997 for a training session that included the following topics:

- background and general overview of the study
- enumeration procedures
- securing the interview (introduction, confidentiality, callbacks,  
preventing and turning refusals)
- probing guidelines
- question by question instructions
- informed consent

In addition, interviewers were given training in computer assisted personal interviews (CAPI). This was the method used by Louis Harris to administer the questionnaire and collect the data. Materials provided during the session included an interviewer training manual, question by question instructions that could be used as aids during the interview process, and a procedures manual for enumeration.

Following the session, procedures were field tested by two interviewers in five Galveston segments not included in the study sample. Information from the pre-test was reviewed by UTMB staff and several areas identified for further improvement before beginning the survey: correcting errors in the CAPI system, providing additional training to the interviewers in enumeration, and making changes to the questionnaire.

#### Survey Tracking System:

The status of the interviewing was tracked by UTMB staff with spread sheets that recorded, by segment number, the expected number of households based on census projections, the actual number based on interviewer enumeration, the number of household units "screened out" because there were no eligible subjects (no females, no Mexican-Americans, no females 50-74), the number of units with eligible women who refused to be interviewed, the number of units who refused screening, the number of accessible units with no contact, the number of units with no access, the number of vacant units, the number of call backs and the number of completed

interviews.

#### Problems Encountered With Field Work:

Our plan was to release the segments to Louis Harris in three replicates as defined by Dr. Daniel Freeman, co-investigator and survey statistician. Each replicate was representative of the entire sample. In terms of size, the first replicate represented 50% of the sample and the other two each represented 25% of the sample. With this method, if it looked like there would be more than 600 subjects, the final set of segments could be reduced or eliminated. If it looked like there might be less than 600 eligible subjects, Louis Harris was to discuss the possibility of adding subjects with Dr. Freeman and also the cost implications of adding such segments.

In January 1998, Louis Harris informed us that their initial cost projections for the survey (\$143,000) overestimated interviewer productivity. As a result they grossly underestimated the direct costs of data collection (interviewer travel costs and time needed to complete each interview). Their personnel costs for project management and data processing were also much greater than initially projected.

They stopped collecting data before completing the first wave of the sample and gave us three options: 1) stop their survey operations permanently; 2) complete survey operations at an additional cost of \$100,000 or 3) complete 67% of the second wave for \$57,000.

After subsequent discussions with their survey staff and analyses of the data collected, we determined that they completed 178 of the 493 interviews we expected based on an 80% response rate. Our preliminary analyses also found that reducing the sample size would reduce our power to detect significant results.

The Louis Harris estimate of \$100,000 to collect these interviews was not affordable. Moreover, there were significant delays beyond what was initially projected in receiving the collected data. We re-examined the productivity estimates from the interviewer listing sheets and the costs Louis Harris incurred for project management and data processing. It appeared that productivity varied by interviewer (about 4 of 7 interviewers were completing interviews at our projected rates for each segment) and that project management and data processing costs exceeded what we had experienced in managing a similar size survey in the past.

We therefore decided to complete the survey ourselves. We requested permission to do so from the Department of the Army. The Army granted us permission and also gave us a no-cost one year's extension (until August 31, 1999). Our field work ended in March 1999.

## II.2 Survey Evaluation

Table 1 (Appendix 3) presents data for the number of occupied, listed and vacant or demolished housing units, as well as coverage rates for this study, for each replicate and the

combined three replicates. The total number of occupied housing units designated by the 1990 census was 13,032. A total of 12,490 housing units were listed by interviewers including 965 houses listed as either vacant or demolished resulting in a total of 11,525 listed occupied units. Thus, based on the number of listed occupied units and number of census occupied units, we were able to list 11,525/13,032 units for an overall coverage rate of 88.4%.

Table 2 (Appendix 3) presents data for the total number of completed interviews, number of eligible subjects, screening results, number of eligible subjects who refused screening, interview and response rates. A total of 451 units yielded completed interviews out of a possible 549 identified eligible subjects or an interview rate of 82.1%. (Note: One unit yielded 2 interviews for a total of 452 interviews.) The overall screening rate was based on all identified units with individuals who agreed to be screened and were able to be screened for interview eligibility. A total of 11,041 units or 95.8% were screened out of 11,525 listed occupied units. The overall response rate for this study (screening rate x interview rate) was 78.7%.

Table 3 (Appendix 3) presents data on a comparison between the expected yield of completed interviews and the actual yield for each replicate and the overall sample. The expected yield refers to an estimated number of eligible subjects anticipated to be identified based on 1990 census block estimates while the actual yield refers to the sum of the number of completed interviews, number of callbacks that were not interviewed and number of subjects who were eligible but refused to be interviewed. Replicate 1 had the lowest yield comparison (87.2%) whereas more than the expected number of eligible subjects were identified in replicate 3 (102.1%).

In summary, based on the measures of survey performance in Appendix 3, the survey produced a valid representative sample of older Mexican American women (age 50-74) in the three Texas counties. Overall, of the 594 Mexican-American women between 50 and 74 years of age expected to be found in the sample area, 549 (92.4%) eligible subjects were identified. The percent of eligible subjects who were interviewed was 82.1%.

### **II.3 Survey Data Base**

The final survey data base contained data from two separate sources: Louis Harris interviews (n=178) and UTMB interviews (n=274). While the questions were identical for both sources, the survey data were collected and processed differently. The data from Louis Harris was entered directly into a laptop (using CAPI software) and then converted to an SPSS file. UTMB staff reviewed this file and found it did not contain all the variables collected in the questionnaire. An Excel file was later sent with these additional variables. These two files were merged using SAS and stored as a SAS file. The data from UTMB was collected with paper questionnaires and entered into an Access data base, then converted to a SAS data base.

Census information pertaining to the sample design (the subject's census tract, block, urban/rural segment) was compiled in an Excel spreadsheet. This information was converted to a

SAS data base and merged separately to the Louis Harris and UTMB data bases.

Prior to concatenation, a series of data manipulations were performed on the Louis Harris and UTMB data sets to make the variables conform to a common coding system (e.g., to make sure a "1" in the Louis Harris data set meant the same as a "1" in the UTMB data set for any given variable). This was a rigorous process done one question at a time over the entire interview. Frequencies were generated for all variables and compared across data bases to identify out of range values and possible inconsistencies in coding of variables. Recodes were made, most often to the Louis Harris data base, to maintain consistency. The final edited data base was stored in SAS format.

This process took 2 and ½ months, from April through mid June 1999. This was longer than expected due to problems in processing the Louis Harris data. These problems were attributed to poor documentation (values in their initial "edit master" for the questionnaire did not correspond to what we found in the data base), data errors and conversion from SPSS to SAS format. The subcontract required that the data be provided in SAS format, which Louis Harris was unable to produce. All of these problems were ultimately resolved but resulted in delays that reduced the time we could spend on data analysis.

## **II. 4 Survey Findings**

### Characteristics of Study Sample

Study subjects ranged in age from 50 to 74 years with a mean age of 59.5 years. Older women in the sample (65-74) accounted for 30 percent of the subjects. In terms of education 75% had less than a high school education, 17 % had completed high school and 8% had years of schooling beyond high school. The majority of the sample was married (63.5%) and had some type of insurance coverage (54%) - either Medicare, Medicaid, or private. About 91% of the sample reported having a usual source of care. Most women (69.5%) were born in the United States.

### Mammography Use

Mammography use was higher than expected and in were close to (or met) the year 2000 goals. The year 2000 goals include: 1) increasing to 80% the percent of Hispanic women age 40 and older who ever had a clinical breast exam and mammogram and 2) increasing to 60% the percent of Hispanic women age 50 and older who received a clinical breast exam and mammogram in the past two years. In our sample, 80% reported ever having a mammogram and 86% reported ever having a clinical breast exam. Over half the sample (56.5%) had a recent (in the past two years) mammogram and 59.5% had a recent breast physical.

## Hypotheses

Statistical tests of the study hypotheses were performed based on responses to relevant questions in the interview. Tables and test statistics are contained in Appendix 4. The results are summarized in this section. The statistical significance of the findings is based on the Mantel Haenszel test for ordinal independent categorical variables and the likelihood ratio chi square test for nominal categorical variables. Associations are considered "significant" if the p-value is less than .05.

*Hypothesis 1. Selected predictors of mammographic screening behavior in predominantly non-Hispanic populations will generalize to Mexican Americans. These include education, marital status and barriers to access, in addition to beliefs, knowledge and attitudes about breast cancer.*

We hypothesized that mammographic use increases with educational attainment and income and decreases with age. Use would also be higher with being married, having insurance coverage and having a usual source of care.

Based on theoretical models of health behavior we expected that use would also be associated with knowledge of the risks and symptoms of breast cancer; attitudes about preventive care; beliefs about the efficacy of screening; and perceived susceptibility to breast cancer.

For both measures of mammography use, use increases significantly with years of education, household income, having some private insurance coverage and having a usual source of care. There is no significant relationship between marital status and use. While use is lower for women 70-74 than younger women, the difference is not significant.

Among those who have heard of a mammogram, 91% of subjects reported that women of their age should have routine mammograms. About 81% felt that women of their age should have yearly mammograms and 10% felt they should have mammograms every two years. When asked the question: "What is the age doctors recommend a women to start having mammograms?", 44% responded with ages from 40 through 50 years and 53% responded with ages less than 40 or greater than 50 or at an age when a woman starts or stops having periods. There was no significant relationship, however, between either measure of mammography use and how often subjects felt that women of their age should be screened or when women should start having mammograms. Likewise, while 98% of women felt the chances of surviving breast cancer were either good (81%) or fair (17%) if detected early, there was no significant relationship between perceived efficacy of screening and use of mammography.

There is a significant relationship, however, between perceived susceptibility to breast cancer and mammography use. Women with female members of their immediate family that have or had breast cancer are more likely to have had a mammogram and to have had a recent

one. In addition, women who worry more about getting breast cancer are more likely to have had a mammogram and to have had one in the past two years. Women who worry about their female relatives getting breast cancer are also significantly more likely to have had a mammogram and to have had a mammogram in the past two years.

Finally, with respect to preventive care, among women who reported having regular check-ups, both measures of mammography use increase significantly with recency of check-ups. Use, however, is not associated with performing breast self exams.

*2. Women with low levels of acculturation are less likely to have had a mammogram/had a mammogram in the past two years than women with high levels of acculturation.*

We hypothesized that all dimensions of acculturation as well as the overall scale are significant predictors of not having a mammogram/having had a mammogram in the past two years. Language use and proficiency, however, would be the strongest predictors. Women who speak only Spanish have lower exposure to television media messages and written material on breast cancer. They also have greater difficulty in locating screening services and making an appointment.

Based on Hazuda's composite score of acculturation, there is a significant association between level of acculturation and both measures of mammography use, with use higher for women who are more acculturated. As hypothesized, language use and proficiency have the strongest associations with mammography use. Both are significantly related to having a recent mammogram. Adult interaction with main stream society is significantly related to ever having a mammogram and almost significant ( $p=.063$ ) for having a mammogram in the past two years. The other dimensions of acculturation are not significantly related to mammography use.

*3. Strong social support related to the family is associated with an increased likelihood of ever having a mammogram.*

We hypothesized that strong family networks, in terms of number and frequency of contacts, are associated with a high likelihood of having a mammogram/having had a mammogram in the past two years. Functional social support, in terms of emotional and material resources from the family that are available to older women, also increases the likelihood of mammogram use.

A particular focus of this study is the relationship between elderly women and their daughters or other younger female family members/relatives/friends. We hypothesized that intergenerational solidarity between mothers and the younger women is a significant predictor of mammographic screening. We also hypothesized that: 1) among women who never had a

mammogram. at least 75 percent would get one on the advice of her daughter or younger female family member/relative/friend and 2) among women who have had a recent mammogram, 25 percent would report that her daughter or younger female family member/relative/friend had ever encouraged her to have one.

Neither measure of mammography use was related to household size, number of sons, number of daughters, number of contacts (seen or talked to) with sons and daughters. There was a trend, however, for mammography use to decrease with increasing household size, number of sons and number of daughters. Among those with children, there was also a trend for women who did not see or talk to their sons or daughters in the past month to have lower mammography use.

While mammography use was not related to marital status, among women who are married there is a general trend toward increased use with higher marital satisfaction. The trend is significant ( $p=.046$ ) for ever having a mammogram and almost significant ( $p=.078$ ) for having a recent mammogram.

Husbands can also potentially increase the likelihood that a woman would get a mammogram if he (the husband) suggested she get one. Among married women, 77% report they are very likely or somewhat likely to get a mammogram if their husband suggested they get one. Moreover, the likelihood of getting a mammogram if the husband suggests it is significantly related to self reported mammography use. The likelihood of getting a mammogram if any other relative or family member suggests it is also significantly related to both measures of mammography use.

The younger female family member/relative/friend (on whom the women relies the most for advice on health matters) can also affect the likelihood that a women has a mammogram. About two-thirds of the women (67.3%) reported having a younger (age 18-35) female family member/relative/ friend who lived close by (within 1 hour). When asked how often they had visits just to talk, 80% of the subjects reported at least once a week. When asked how often the younger woman gave advice regarding the subject's health, 80% reported at least once a year and 57% reported at least once a month.

Among women who have a younger female family member/relative/friend who lives close by, 80% report they are very likely or somewhat likely to get a mammogram if she suggest it. The relationship between reported likelihood of getting a mammogram on the advice of the younger woman and both measures of mammography use are significant. Moreover, among those who NEVER had a mammogram 64% would be likely to get one on the advice of the younger female relative. Among those who have not had one in the past two years, 75% would be likely to get one on the advice of the younger woman.

What role has the family actually played in encouraging women to get mammograms? Only 29% of the subjects report that a family member has ever encouraged them to get a

mammogram. This family member is most likely to be the woman's daughter, sister or husband. Whether or not a family member has ever encouraged a woman to get a mammogram, however, is not related to either ever having a mammogram or having had a recent mammogram (past 2 years).

## II.5 Validation of Self Reports

All 452 subjects were asked when they had their most recent mammogram. This response was used to determine a value for self reported mammography use: yes, if they had a mammogram within the two years prior to their interview data and no if they had a mammogram two or more years (including NEVER) before their interview date.

The subjects were also asked to sign a consent form granting permission to verify their self reports through a medical chart review. Written consent was obtained for 433 women and 19 refused. The 433 consent forms were sorted by the medical record location listed on the form: 37 said they had no records (or no doctor) so no facility was listed on the form and 113 listed a private doctor or clinic that we were not able to contact.

Abstraction forms for the remaining 283 women were sent to facilities where the women indicated we could review their medical records. Facilities were asked to indicate on the form whether they could find records for these women and, if so, record the dates of the most recent mammograms prior to the date of the interview (maximum of 4 dates). Of these 283 forms, 37 were not returned and 53 forms were returned indicating that no medical records for those respondent were found.

We therefore obtained medical record data on 193 women. For one of these women, the date since last mammogram could not be determined from the interview. The 2 x 2 table below compared the self reports to the medical record review for these 192 women.

		<u>Chart Review</u>	
		< 2 years ago	>= 2 years ago or no mammogram in record
<u>Self Report</u>	< 2 years ago	104	36
	>= 2 years ago or no mammogram in record	8	44

Using the medical chart as the gold standard, the sensitivity was .93 (104/112) and the specificity

was .55 (44/80). The positive predictive value was .74 (104/140). The two sources agreed on whether or not the women had a recent mammogram (within 2 years) for 77% of the 192 subjects who had information on both self reported use and medical chart review.

## II.6 Discussion

Although Hispanic women have lower rates of breast cancer, they present at a later stage with a poorer prognosis for survival. Ethnic differences in stage at diagnosis may be explained in part by the lower participation of Hispanic women in breast cancer screening. Programs to encourage screening in this population must therefore be developed and evaluated for their effectiveness in increasing the routine use of mammography. Critical to the design of these programs is information on the screening behavior of elderly Hispanic women and how culturally specific values might be utilized to promote annual mammography.

Two hypotheses have been proposed to explain the under-utilization of preventive services in general among Hispanics. One attributes it to problems with access, such as lack of health insurance or having no usual source of care, which are more prevalent in the Hispanic population. The second attributes it to acculturation or the process of change that individuals undergo (in terms of language, attitudes and personality) as they are exposed to a new culture. This hypothesis argues that the more acculturated one becomes the more likely he/she is to utilize health services.

A number of previous studies have examined determinants of mammographic screening behavior among Hispanic women [15-27], but few have focused on the older age group [16-19, 23]. Subjects in these studies were predominantly Mexican American residents of urban areas. Mammographic screening was found to increase with age [17,24,27] and educational attainment [17] and breast cancer knowledge [27]. It was greater for measures of access to care - having a regular doctor [16] and transportation services [16] - and engaging in preventive health behaviors [16]. Ethnic differences may disappear when controlling for demographic and other factors [22-24], but may also remain as an independent predictor of screening behavior [25,26]. When acculturation had a significant effect, it was attributed either to language preference [15,19] with Spanish language usage interpreted as a barrier to access [28]. Or, it was also attributed to strong attitudes towards traditional family structure with familism in the less acculturated group providing a positive influence on behavior. [21].

Other research involving Mexican American women in Texas suggested that familism may also be an important factor in reinforcing or hindering screening behavior [21,28,29]. Familism is a central value to the Mexican American culture [3,30-32] and refers to the "strong identification and attachment of individuals to their families" [3]. Members of Hispanic families have strong feelings of loyalty and a commitment to provide emotional and material support to others within the family. They also have a strong commitment to extended family relationships and rely on family members in time of need.

While familism is a value shared with other cultures, high familism is a particularly distinct and important characteristic in Hispanic groups. It is generally seen as a positive influence by providing a buffer against physical and emotional stress [33]. Family responsibilities, however, may also produce adverse effects such as depression in the elderly [34]. It may also inhibit the acceptance of medical practices and act as a barrier to health services utilization [35].

The effect of familism on utilization of health services, however, may be a function of the care being sought. Frequency of family contacts was found to be positively related to seeking prenatal care early in pregnancy but negatively related to consulting with a physician when ill [28]. Further evidence of the reinforcing role of familism in preventive care is found in a study of breast cancer screening participation among Texas women [29]. Among Hispanic women who participated in the screening program 27 percent cited "pressure from family" as an important factor in their decision to participate.

These studies and the familistic orientation of the Mexican American culture suggested that breast cancer screening among older Hispanic women might be enhanced through family oriented interventions. In Mexican American families, relationships between mothers and daughters and other female members are particularly close [30] and could be used to promote mammographic screening across generations. Family focused interventions based on female relationships is further supported by Markides' study of three generations of Mexican Americans [4]. The family was found to be the dominant source of information and help in all generations. Moreover, women were the predominant source of advice regarding minor health problems, with the older generation relying mostly on their daughters.

Relationships among female family members, especially between mothers and daughters, could therefore form the basis of a community based family intervention where daughters (or other younger female relatives) are encouraged to promote screening behavior in their mothers. The underlying rationale is that the younger population of Hispanics is probably on average better educated and more knowledgeable about cancer risks and screening techniques. They also have more exposure to health screening information in their child bearing years through frequent doctor/clinic visits for maternal and child health services. We argue that a strong, supportive mother/daughter (or other younger female relative) relationship could promote the exchange of this information and provide encouragement to participate in mammographic screening.

In order to design such an intervention, however, more information was needed on the screening behavior of elderly Hispanic women and how culturally specific values such as familism might be utilized to promote annual mammography [36,37]. Hence, the purpose of this study was to survey Mexican-American women age 50-74 in three southeast Texas counties regarding their use of mammographic screening. Through a population based survey, the study identified the correlates of ever having a mammogram and having had a mammogram in the past two years, with a focus on factors unique to the Mexican American population that might

reinforce or discourage screening behavior. Of particular interest was the negative influence of low acculturation found in other studies of health services utilization and the potential supportive role of familism.

Data were collected to help us assess the nature and extent of family networks and support and their influence (actual and potential) on screening behavior. To this end, a series of hypotheses were formulated and tested with responses to questions in the interview. These hypotheses addressed whether: 1) selected predictors of mammographic screening behavior in predominantly non-Hispanic populations would generalize to Mexican-Americans; 2) women with low levels of acculturation would be less likely to have had a mammogram (or a recent mammogram) than women with high levels of acculturation; and 3) strong social support related to the family was associated with an increased likelihood of ever having a mammogram (or a recent mammogram).

In summary, we found that mammography use (ever had a mammogram, had mammogram in past two years) increases significantly with years of education, household income, having some private insurance coverage and having a usual source of care. There is no significant relationship between marital status and use nor between age and use. While women appeared to be knowledgeable about the efficacy of screening and the recommendation for routine screening, this knowledge was not associated with mammography use. Use was also not significantly associated with attitudes towards preventive care - particularly having routine check-ups and breast self exams. There was a significant relationship, however, between perceived susceptibility to breast cancer and mammography use. Women with female members of their immediate family that have or had breast cancer were more likely to have had a mammogram and to have had a recent one. In addition, women who worry more about getting breast cancer or who worry more about their female relatives getting breast cancer are also significantly more likely to have had a mammogram and to have had one in the past two years.

There is a significant association between level of acculturation and both measures of mammography use, with use higher for women who are more acculturated. Language use and proficiency have the strongest associations with mammography use.

Our findings suggest that strong family relationships, measured in terms of family size and number of contacts are not significantly associated with mammography use. There is, however, a significant potential for family to play an important role in promoting screening behavior by having an influential family member suggest that a woman get a mammogram. We have focused on the younger female family member/relative/friend living close by that the woman relies on the most for advice about health matters. Family interventions aimed at encouraging the younger woman to promote screening behavior in her older family member/relative/friend could be an effective intervention by reinforcing routine screening practice. Our study found that among those women who never had a mammogram, 64% indicated they would be likely to get one on the advice of the younger female relative. Among those who have not had one in the past two years, 75% would be likely to get one on the younger

woman's advice. Moreover, data from the survey indicate that about two thirds of the women have such a younger woman living close by. The majority of these subjects (80%) report that they frequently see the younger woman and have received advice on their health from her.

### **III. Key Research Accomplishments**

- Conducted population based survey of 452 Mexican-American women age 50-74 in three Texas counties regarding use of mammography (ever had a mammogram, had a mammogram in the past year)
  - population from urban and rural areas in southeast Texas
  - based on our survey evaluation (coverage, screening, interview rates), the survey produced a valid representative sample of older Mexican American women in the three counties
  - face to interviews collected data on subjects' health status, level of acculturation, socio-demographic characteristics, knowledge and beliefs about breast cancer and mammographic screening, family networks and relationships, living arrangements, preventive health practices, access to medical care and insurance coverage
  - completed interviews on 81% of eligible subjects
- Constructed analytical data base from survey data
- Findings indicate that:
  - mammography use increases with years of education, household income, having some private health insurance coverage, having a usual source of care and perceived susceptibility to breast cancer
  - use not significantly associated with age, marital status and attitudes towards preventive care
  - use increases with higher levels of acculturation
    - language use and proficiency have the strongest association with mammography use
  - there is a strong potential for family to play an important role in promoting

screening behavior by having an influential family member suggest that a woman get a mammogram

- Implications of findings:
  - family interventions aimed at encouraging younger women to promote screening behavior in older female family members or relatives could be an effective intervention reinforcing routine screening practice
- Conducted validation study of mammography self-reports
  - compared self reports of mammography use on 192 women to medical charts
  - with medical charts as gold standard: sensitivity=.93, specificity=.55, positive predictive value=.74, overall agreement = 77%
  - findings suggest self reports of Mexican-American women may over-estimate mammography screening
  - implications: less progress may have been made in reaching year 2000 objectives in our population and also in the nation as a whole as reported in periodic reviews of the Health People 2000 goals

#### **IV. Reportable Outcomes**

##### **1. Manuscripts in progress:**

Role of the Family in Promoting Mammography Screening Among Older Mexican American Women, J.L. Freeman  
Influence of Acculturation on Screening Mammography in Older Mexican American Women. S. Khan  
Correlates of Screening Mammography in Older Mexican American Women, J. L. Freeman  
Validity of Mammography Self reports By Older Mexican American Women, J. Mahnken, T. DiNuzzo

##### **2. Degrees obtained that are supported by the award:**

John Mahnken, Master's Degree in Biostatistics, expected May 2000  
(Mr. Mahnken was paid part time for data analysis.)

##### **3. Informatics such as data bases and animal models, etc.**

Data base of survey interviews on 452 Mexican American women

## V. Conclusion

Based on our analyses of the survey data, we have the following conclusions regarding the correlates of mammography use and their implications for designing interventions in this population of older Mexican American women:

1. Women were knowledgeable about the efficacy of screening and the recommendation that women their age should receive routine screening mammograms.
2. Socio-demographic and economic characteristics that may negatively affect screening practice in non-Hispanic populations also appear to affect older Mexican American women. In particular, mammography use decreases with lower levels of educational attainment, income and not having a usual source of care.
3. The major cultural barrier may be language use and proficiency. Mammography use decreases with less use of English and less proficiency in English.
4. Since women are knowledgeable about the efficacy of screening and the recommendation for routine screening, challenges with language may be a barrier in terms of accessing services such as asking physicians for a mammography referral and knowing where to go to get a mammogram.
5. Most women (67.3%) have a younger female family member/relative/friend that lives close by. The majority of these subjects (80%) report that they frequently see the younger woman and have received advice on their health from her.
6. Among those women who never had a mammogram, 64% indicated they would be likely to get one on the advice of the younger female relative. Among those who have not had one in the past two years, 75% would be likely to get one on the younger woman's advice.

These findings have implications for the design of an intervention that activates older women to seek mammography through younger women. Younger women could be exposed to screening information as they visit maternal and child health clinics for routine obstetrical/gynecological and pediatric services. Often older women accompany younger women to these visits but are not direct recipients of health education or services. The clinic could provide the younger women information on screening risks and benefits as they pertain to older women and also information on where to go to receive mammograms. The younger women would then be encouraged to talk to their older family members/relatives/friends about the importance of getting mammograms and assist them in accessing mammography services. Our data support the potential effectiveness of this intervention: a high proportion of older Mexican American women have younger women living close by whom they see frequently and get advice on health matters. Moreover, the majority of these older women are likely to get mammograms

on the advice of the younger women.

## **VI. List of Personnel Paid From Research Effort**

Jean L. Freeman, Ph.D.  
Daniel H. Freeman, Jr., Ph.D.  
James S. Goodwin, M.D.  
Kyriakos Markides, Ph.D.  
Sandra Black, Ph.D.  
Tony DiNuzzo  
Whitney Randolph  
John Mahnken

## **VII. Manuscripts**

Role of the Family in Promoting Mammography Screening Among Older Mexican American Women, J.L. Freeman  
Influence of Acculturation on Screening Mammography in Older Mexican American Women, S. Khan  
Correlates of Screening Mammography in Older Mexican American Women, J. L. Freeman  
Validity of Mammography Self reports By Older Mexican American Women, J. Mahnken, T. DiNuzzo

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## APPENDIX 1

### Tables and Figures Describing Target Population and Sample Design



**Table 1: Selected Population Characteristics: Galveston,  
Brazoria and Matagorda Counties**

<b>Characteristic</b>	<b>Galveston</b>	<b>Brazoria</b>	<b>Matagorda</b>
<b>Study Population: Mexican American Women 50-74 Years</b>			
50-74 Years	1236	1991	533
50-54 Years	376	478	133
55-59 Years	308	464	139
60-64 Years	231	459	112
65-69 Years	192	367	88
70-74 Years	129	223	61
<b>Total Population</b>	<b>271,399</b>	<b>191,707</b>	<b>36,928</b>
% Hispanic Origin	14	17	25
% Mexican American	12	16	23
<b>% Persons 25 Years+ With No High School Diploma/GED</b>			
Total	24	25	33
Hispanic Origin	47	48	61
Not Hispanic Origin	21	21	26
<b>Per Capita Income of Persons 15 years+</b>			
Total	\$13,993	\$13,468	\$11,374
Hispanic Origin	8,468	8,123	5,915
Not Hispanic Origin	15,900	14,444	13,986
<b>% Persons Below Poverty Level</b>			
Total	15	10	21
Hispanic Origin	23	18	46
Not Hispanic Origin	14	9	16
<b>Primary Care Physicians Per 10,000 Population</b>			
	6.6	3.8	5.3

Table 2. Sample sizes required for an 80 percent coverage probability by a  $\pm 5$  percent confidence interval, with 25 percent design effect and 80 percent response rate.

Prevalence	95 percent confidence level		90 percent confidence level	
	Sample Size	Adjusted for Non Response and Design effect	Sample Size	Adjusted for Non Response and Design effect
10 percent	154	241	111	173
20 percent	267	417	190	297
30 percent	349	545	248	387
40 percent	394	616	281	439

Table 3. Power as a function of shift from baseline and predictor distribution

Shift	N1	N2	Power
.15	300	100	.8
.2	101	100	.85
.15	122	200	.8
.2	101	200	.93

Table 4. Population size and characteristics for sampled counties.

Characteristic	Galveston	Brazoria	Matagorda
Population [118]	271,399	191,707	36,928
Mexican American women 50-74 [119]	1,991	1,236	533
Occupied Housing Units [120]	81,451	64,019	13,164
Percent Eligible	2.4	1.9	4.0

## APPENDIX 2

### Survey Questionnaire

**Case #** \_\_\_\_\_

**Interview conducted in:**

**English** \_\_\_\_\_

**Spanish** \_\_\_\_\_

# **WOMEN'S HEALTH SURVEY**

**MAMMOGRAPHY USE AMONG OLDER MEXICAN  
AMERICAN WOMEN**

**CENTER ON AGING  
UNIVERSITY OF TEXAS MEDICAL BRANCH  
GALVESTON, TX**

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Date \_\_\_\_\_

**I am going to start by asking about your background.**

98 DK  
99 RF

\_\_\_\_\_ 98 DK  
99 RF

98 DK  
99 RF

\_\_\_\_\_ 98 DK  
99 RF

\_\_\_\_\_ 98 DK  
99 RF

A5a **IF LESS THAN 12 YEARS ASK:** Have you obtained a GED, that is, the Graduate Equivalency Examination?

- ☐ 1 yes, obtained GED
- ☐ 2 no, did not obtain GED
- ☐ 98 DK
- ☐ 99 RF

A6 Are you currently married, widowed, divorced, separated or have you never been married? **(INCLUDE COMMON LAW MARRIAGES UNDER MARRIED)**

- ☐ 1 married
  - ☐ 2 widowed
  - ☐ 3 divorced
  - ☐ 4 separated
- } **ASK Q.A7**
- 
- ☐ 5 never married
  - ☐ 98 DK
  - ☐ 99 RF
- } **GO TO Q.A8**

A7 How long have you currently been (married/separated/divorced /widowed) **[Answer from Q.A6]? [IF <1 YEAR ENTER 1; ROUND OFF TO NEAREST YEAR, eg. 18 months = 2 years]**

\_\_\_\_\_ number of years) OR since 19\_\_\_\_ year

- ☐ 98 DK
- ☐ 99 RF

**IF LESS THAN ONE YEAR, CODE 01.**

A8 Are you currently employed, a homemaker, on disability, retired, or have you never worked?

- ☐ 1 employed full time
- ☐ 2 employed part time
- ☐ 3 homemaker
- ☐ 4 on disability
- ☐ 5 retired
- ☐ 6 self-employed - full time
- ☐ 7 self-employed - part time
- ☐ 8 never worked
- ☐ 9 unemployed
- ☐ 98 DK
- ☐ 99 RF

**B. (SF-36) GENERAL HEALTH AND HEALTH CARE**

The next set of questions asks for your views about your current health and your daily activities. Try to answer each question with the best possible answer.

B1 In general, would you say your health is:

- ☐ 1 excellent
- ☐ 2 very good
- ☐ 3 good
- ☐ 4 fair
- ☐ 5 poor
- ☐ 98 DK
- ☐ 99 RF

B2 *Compared to one year ago, how would you rate your health in general now?*  
Would you say...

- ☐ 1 much better now than one year ago
- ☐ 2 somewhat better now than one year ago
- ☐ 3 about the same now as one year ago
- ☐ 4 somewhat worse now than one year ago
- ☐ 5 much worse now than one year ago
- ☐ 98 DK
- ☐ 99 RF

B3 The following questions are about activities you might do during a typical day. After I read each question, please tell me if your health limits you in these activities a lot, a little or not at all. [SHOW CARD] (IF THE RESPONDENT SAYS SHE DOES NOT DO THIS ACTIVITY, PROBE "IS IT BECAUSE OF YOUR HEALTH?" AND IF "YES", RECORD RESPONSE AS "YES, LIMITED A LOT"; IF "NO", RECORD AS NA)

Does your health limit you in:	Yes, limited a lot	Yes, limited a little	No, not limited at all	DK	RF	NA
a. <i>Vigorous activities</i> , such as running, lifting heavy objects, or participating in strenuous sports.						
b. <i>Moderate activities</i> , such as moving a table, pushing a vacuum cleaner, bowling, or playing golf.						
c. Lifting or carrying groceries						
d. Climbing <i>several</i> flights of stairs						
e. Climbing <i>one</i> flight of stairs						
f. Bending, kneeling, or stooping						
g. Walking <i>more than one mile</i>						
h. Walking <i>several blocks</i>						
i. Walking <i>one block</i>						
j. Bathing or dressing yourself						

B4a During the *past 4 weeks*, have you cut down on the *amount of time* you spent on work or other regular daily activities as a result of your physical health?

- \_\_\_\_ 1 yes  
 \_\_\_\_ 2 no  
 \_\_\_\_ 98 DK  
 \_\_\_\_ 99 RF

B4b During the past 4 weeks, have you *accomplished* less than you would like as a result of your physical health?

- ☐ 1 yes
- ☐ 2 no
- ☐ 98 DK
- ☐ 99 RF

B4c During the past 4 weeks, were you limited in the *kind* of work or other regular daily activities as a result of your physical health?

- ☐ 1 yes
- ☐ 2 no
- ☐ 98 DK
- ☐ 99 RF

B4d During the past 4 weeks, have you had *difficulty* performing your work or other regular daily activities as a result of your physical health (for example, it took extra effort)?

- ☐ 1 yes
- ☐ 2 no
- ☐ 98 DK
- ☐ 99 RF

B5a During the past 4 weeks, have you cut down on the *amount of time* you spent on work or other regular activities as a *result of any emotional problems* (such as feeling depressed or anxious)?

- ☐ 1 yes
- ☐ 2 no
- ☐ 98 DK
- ☐ 99 RF

B5b During the past 4 weeks, have you *accomplished* less than you would like as a *result of any emotional problems* (such as feeling depressed or anxious)?

- ☐ 1 yes
- ☐ 2 no
- ☐ 98 DK
- ☐ 99 RF

B5c During the past 4 weeks, did you not do work or other regular activities as *carefully* as usual as a result of any emotional problems (such as feeling depressed or anxious)?

- ☐ 1 yes
- ☐ 2 no
- ☐ 98 DK
- ☐ 99 RF

B6 During the past 4 weeks, to what extent has your physical health or emotional problems interfered with your normal social activities with family, friends, neighbors, or groups? Have they interfered...

- ☐ 1 not at all
- ☐ 2 slightly
- ☐ 3 moderately
- ☐ 4 quite a bit
- ☐ 5 extremely
- ☐ 98 DK
- ☐ 99 RF

B7 How much *bodily* pain have you had during the past 4 weeks? Have you had. . .

- ☐ 1 no pain
- ☐ 2 very mild pain
- ☐ 3 mild pain
- ☐ 4 moderate pain
- ☐ 5 severe pain
- ☐ 6 very severe pain
- ☐ 98 DK
- ☐ 99 RF

B8 During the past 4 weeks, how much did pain interfere with your normal work (including work both outside the home and housework)? Has it interfered...

- ☐ 1 not at all
- ☐ 2 a little bit
- ☐ 3 moderately
- ☐ 4 quite a bit
- ☐ 5 extremely
- ☐ 98 DK
- ☐ 99 RF

- B9 These questions are about how you feel and how things have been with you *during the past 4 weeks*. After I read each question, please tell me the one answer that comes closest to the way you have felt. [SHOW CARD]

How much of the time during the *past 4 weeks*:

	All of the time	Most of the time	A good bit of the time	Some of the time	A little of the time	None of the time	DK	F
a. Did you feel full of pep?								
b. Have you been a very nervous person?								
c. Have you felt so down in the dumps that nothing could cheer you up?								
d. Have you felt calm and peaceful?								
e. Did you have a lot of energy?								
f. Have you felt downhearted and blue?								
g. Did you feel worn out?								
h. Have you been a happy person?								
i. Did you feel tired?								

- B10 During the *past 4 weeks*, how much of the time has *your physical health or emotional problems* interfered with your social activities (like visiting with friends, relatives, etc.)? Would you say...

- \_\_\_\_ 1 all of the time  
 \_\_\_\_ 2 most of the time  
 \_\_\_\_ 3 some of the time  
 \_\_\_\_ 4 a little of the time  
 \_\_\_\_ 5 none of the time  
 \_\_\_\_ 98 DK  
 \_\_\_\_ 99 RF

B11 Now I am going to read you a list of statements. After each one, please tell me if it is definitely true for you, mostly true, mostly false or definitely false. If you do not know, tell me. **[SHOW CARD]**

	Definitely true	Mostly true	DK	Mostly false	Definitely false	RF
a. I seem to get sick a little easier than other people						
b. I am as healthy as anybody I know						
c. I expect my health to get worse						
d. My health is excellent						

### C. HEALTH SERVICE USE

C1 Is there one particular clinic, health center, doctor's office, or other place that you usually go if you are sick or need advice about your health? **[INTERVIEWER: RECORD YES IF MORE THAN ONE PARTICULAR PLACE]**

\_\_\_ 1 yes ⇨ **ASK Q.C2**

\_\_\_ 2 no  
 \_\_\_ 98 DK  
 \_\_\_ 99 RF

} **GO TO Q.C10**

C2 Where do you usually go when you need help with a physical health problem?

\_\_\_ 1 doctor's office  
 \_\_\_ 2 hospital emergency room  
 \_\_\_ 3 hospital outpatient clinic  
 \_\_\_ 4 public health clinic  
 \_\_\_ 5 HMO/prepaid group practice  
 \_\_\_ 6 clinic at any workplace  
 \_\_\_ 7 other (**Specify**) \_\_\_\_\_  
 \_\_\_ 98 DK  
 \_\_\_ 99 RF

C3 What is the name of this [insert response from Q. C2]? **[INTERVIEWER: PROBE FOR FULL NAME. DO NOT ABBREVIATE]**

\_\_\_\_\_

\_\_\_ 98 DK  
 \_\_\_ 99 RF

C4 Do you usually see the same physician or health professional when you go there?

\_\_\_ 1 yes  
 \_\_\_ 2 no  
 \_\_\_ 98 DK  
 \_\_\_ 99 RF

**C5** What mode of transportation do you usually use to get there?

- ☐ 1 drive yourself  
☐ 2 driven by someone else SPECIFY RELATIONSHIP \_\_\_\_\_  
☐ 3 city/regional bus  
☐ 4 taxi  
☐ 5 other (Specify) \_\_\_\_\_  
☐ 98 DK  
☐ 99 RF

**C6** How long does it take you to get there?

- \_\_\_\_\_ 1 < 15 minutes  
 \_\_\_\_\_ 2 15 - 29 minutes  
 \_\_\_\_\_ 3 30 - 59 minutes  
 \_\_\_\_\_ 4 1 hour  
 \_\_\_\_\_ 5 more than 1 hour, less than 2 hours  
 \_\_\_\_\_ 6 2 hours or more  
 \_\_\_\_\_ 98 DK  
 \_\_\_\_\_ 99 RF

**C7** How often do you find it difficult to arrange transportation to see a doctor?

- ☐ 1 never  
☐ 2 sometimes  
☐ 3 often  
☐ 4 always  
☐ 98 DK  
☐ 99 RF

C8 Some people visit a doctor for a routine check-up, even though they are feeling well and have not been sick. When was the last time you visited a doctor for a routine check-up? [If "Never" record "0" for time since]

\_\_\_\_ SPECIFIED DATE: \_\_\_\_ 19\_\_\_\_  
MONTH YEAR

Time since \_\_\_\_\_ days weeks months years AGO } Go to C9  
(Circle correct time since)

- 98 DK ➡ ASK Q.C8a  
99 RF

C8a If DK then probe: Was it less than 1 year ago, at least 1 year but less than 2 years ago, or 2 or more years ago?

- ☐ 1 less than 1 year ago
- ☐ 2 at least 1 year but less than 2 years ago
- ☐ 3 2 or more years ago
- ☐ 98 DK
- ☐ 99 RF

[INTERVIEWER: PROBE EXTENSIVELY IF DK FOR C8a]

C9 When was the last time you went to a doctor for care or advice, other than a routine check-up? [If "Never" record "0" for time since]

☐ SPECIFIED DATE:   19   
MONTH YEAR

☐ Time since  days  weeks  months  years AGO  
(Circle correct time since)

Go to C9b

- ☐ 98 DK
- ☐ 99 RF

ASK Q.C9a

C9a If DK then probe: Was it less than 1 year ago, at least 1 year but less than 2 years ago, or 2 or more years ago?

- ☐ 1 less than 1 year ago
- ☐ 2 at least 1 year but less than 2 years ago
- ☐ 3 2 or more years ago
- ☐ 98 DK
- ☐ 99 RF

[INTERVIEWER: PROBE EXTENSIVELY IF DK FOR C9a]

C9b In the past 12 months, have you ever put off or postponed seeking medical care you felt you needed?

- ☐ 1 Yes, put off or postponed
- ☐ 2 No, did not put off or postponed
- ☐ 98 DK
- ☐ 99 RF

**C10 IF NO USUAL SOURCE OF CARE, What is the main reason that you do not have a regular place where you go for health care? [DO NOT READ OPTIONS]**

- ☐ 1 have not needed a doctor/ don't get sick
- ☐ 2 have several doctors depending on what is wrong
- ☐ 3 previous doctor is not available any more
- ☐ 4 haven't been able to find an appropriate doctor/don't know where to go
- ☐ 5 recently moved here
- ☐ 6 not enough money/cost
- ☐ 7 no physicians in the area
- ☐ 8 don't like doctors
- ☐ 9 don't think doctors can help
- ☐ 10 other (Specify) \_\_\_\_\_
- ☐ 98 DK
- ☐ 99 RF

**C11 Where do you usually get your female health care? probe: IF HOSPITAL: "Do you usually go to an outpatient clinic or an emergency room?" IF CLINIC: "Is this a public health clinic or some other kind of clinic?"**

- ☐ 1 doctor's office
- ☐ 2 hospital emergency room
- ☐ 3 hospital outpatient clinic
- ☐ 4 public health clinic
- ☐ 5 HMO/prepaid group practice
- ☐ 6 clinic at any workplace
- ☐ 7 no particular place
- ☐ 8 do not get female care → GO TO Q.C13
- ☐ 9 other (Specify) \_\_\_\_\_
- ☐ 98 DK
- ☐ 99 RF

**C12 Do you usually get your female health care at the same place you usually get your other medical care?**

- ☐ 1 yes
- ☐ 2 no
- ☐ 98 DK
- ☐ 99 RF

C13 When you go for medical or female health care, do you usually go by yourself or does someone usually go with you?

- \_\_\_\_ 1 by yourself ⇨ GO TO Q.D1  
\_\_\_\_ 2 with someone else ⇨ ASK Q.C14

If "With someone else" specify relationship \_\_\_\_\_

- \_\_\_\_ 98 DK }  
\_\_\_\_ 99 RF } Go to Q.D1

C14 Why does [insert who is specified in C13] usually go with you?

- \_\_\_\_ 1 companionship/support  
\_\_\_\_ 2 need for translator  
\_\_\_\_ 3 transportation  
\_\_\_\_ 4 other (Specify) \_\_\_\_\_  
\_\_\_\_ 98 DK  
\_\_\_\_ 99 RF

# D. PERSONAL HISTORY OF BREAST CANCER

D1 Has a medical doctor ever told you that you had cancer of any kind?

\_\_\_ 1 yes    ⇨ Ask Q.D2

\_\_\_ 2 no  
\_\_\_ 98 DK    }    GO TO Q.D4  
\_\_\_ 99 RF

D2 What kind of cancer was it? [Multiple record if necessary]

\_\_\_ 1 breast  
\_\_\_ 2 lung  
\_\_\_ 3 colon/rectum  
\_\_\_ 4 cervical  
\_\_\_ 5 other (Specify) \_\_\_\_\_  
\_\_\_ 98 DK  
\_\_\_ 99 RF

IF BREAST CANCER NOT MENTIONED IN Q.D2 THEN ASK D3; IF BREAST CANCER MENTIONED IN Q.D2 GO TO D4;

D3 Has a doctor ever told you that you had breast cancer?

\_\_\_ 1 yes  
\_\_\_ 2 no  
\_\_\_ 98 DK  
\_\_\_ 99 RF

D4 Are there any female members of your immediate family who have or have had breast cancer? By immediate family, I mean your mother, sister, aunt, daughter or grandmother? [INCLUDE THESE FAMILY MEMBERS WHETHER IN-LAWS OR NOT]

\_\_\_ 1 yes    ⇨ ASK Q.D5  
\_\_\_ 2 no  
\_\_\_ 98 DK    }    GO TO Q.D6  
\_\_\_ 99 RF

D5 Who was that? [Multiple record if necessary]

\_\_\_\_ 1 mother                      Number of family members mentioned \_\_\_\_\_  
\_\_\_\_ 2 sister  
\_\_\_\_ 3 aunt  
\_\_\_\_ 4 daughter  
\_\_\_\_ 5 grandmother  
\_\_\_\_ 6 Other (Specify) \_\_\_\_\_  
\_\_\_\_ 98 DK  
\_\_\_\_ 99 RF

D6 Other than female members of your immediate family, are there any other relatives or close friends who have or have had breast cancer?

\_\_\_\_ 1 yes  
\_\_\_\_ 2 no  
\_\_\_\_ 98 DK  
\_\_\_\_ 99 RF

## E. MAMMOGRAMS AND BREAST PHYSICAL EXAMS

Now I am going to ask you some questions about different kinds of breast examinations.

E1 A mammogram is an x-ray taken only of the breasts by a machine that presses the breast between two plates. Have you ever heard of a mammogram?

\_\_\_ 1 yes, heard of mammogram ⇨ Ask Q.E2

\_\_\_ 2 no, never heard of mammogram

\_\_\_ 98 DK

\_\_\_ 99 RF

} Go to instructions above Q.E20

E2 Have you ever had a mammogram?

\_\_\_ 1 yes ⇨ ASK Q.E3

\_\_\_ 2 no

\_\_\_ 98 DK

\_\_\_ 99 RF

} GO TO Q.E11

E3 When did you have your (most recent) mammogram?

\_\_\_ SPECIFIED DATE: \_\_\_ 19\_\_\_  
MONTH YEAR

\_\_\_ Time since \_\_\_ days weeks months years AGO  
(Circle correct time since)

} Go to E4

\_\_\_ 98 DK ⇨ ASK Q.E3a

\_\_\_ 99 RF

E3a If DK then probe: Was it less than 1 year ago, at least 1 year but less than 2 years ago, or 2 or more years ago?

\_\_\_ 1 less than 1 year ago

\_\_\_ 2 at least 1 year but less than 2 years ago

\_\_\_ 3 2 or more years ago

\_\_\_ 98 DK

\_\_\_ 99 RF

E4 Where was this mammogram done? In a private doctor's office, a clinic, a hospital, a mammography van or some other place? **[PROBE IF NECESSARY. INCLUDE HOSPITAL BASED MAMMOGRAPHY FACILITIES, SUCH AS RADIOLOGY DEPARTMENTS, UNDER HOSPITAL]**

- ☐ 1 doctor's office  
☐ 2 clinic  
☐ 3 hospital  
☐ 4 mammography van  
☐ 5 other **[Specify]** \_\_\_\_\_  
☐ 98 DK  
☐ 99 RF

E5 What is the name and address (location) of this (office, clinic, hospital, van, facility) where you had this mammogram? **[IT IS IMPORTANT TO BE AS SPECIFIC AS POSSIBLE ON THE NAME AND LOCATION. Interviewer: DO NOT ABBREVIATE]**

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_

State \_\_\_\_\_

☐ 98 DK

☐ 99 RF

E6 Did you go for your last mammogram because of a health problem or just as part of a routine check-up?

☐ 1 health problem ⇨ **[ASK E7]**

☐ 2 routine check-up }  
☐ 98 DK } **[GO TO E8]**  
☐ 99 RF }

E7 What was the problem? [MULTIPLE RECORD IF NECESSARY- DO NOT READ OPTIONS]

\_\_\_ 1 discharge

\_\_\_ 2 lumps

\_\_\_ 3 pain

\_\_\_ 4 soreness

\_\_\_ 5 swelling

\_\_\_ 6 thickness

\_\_\_ 7 other (SPECIFY) \_\_\_\_\_

\_\_\_ 98 DK

\_\_\_ 99 RF

GO TO E9

E8 Why did you decide to have this mammogram? Was it because. . . [MULTIPLE RECORD IF NECESSARY]

\_\_\_ 1 It had been a year or longer since you had one

\_\_\_ 2 You never had one and thought you should

\_\_\_ 3 A friend suggested it

\_\_\_ 4 A family member suggested it

\_\_\_ 5 Of something you saw, heard or read

\_\_\_ 6 Of a doctor or nurse's advice

\_\_\_ 7 Some other reason (Specify) \_\_\_\_\_

\_\_\_ 98 DK

\_\_\_ 99 RF

E9 How many mammograms have you had in the last 10 years?

\_\_\_ \_\_\_ mammograms

\_\_\_ 98 DK

\_\_\_ 99 RF

E10 Have you ever gone to get a mammogram without a doctor ordering it?

\_\_\_ 1 yes

\_\_\_ 2 no

\_\_\_ 98 DK

\_\_\_ 99 RF

E11 Have you ever asked a doctor to order a mammogram for you?

- ☐ 1 yes
- ☐ 2 no
- ☐ 98 DK
- ☐ 99 RF

E12 Has a doctor ever recommended you get a mammogram but you didn't get it?

- ☐ 1 yes
- ☐ 2 no
- ☐ 98 DK
- ☐ 99 RF

**[Ask QE13 if QE3 is more than or equal to 2 years; Go to E14 if E3 is less than 2 years, DK or RF]**

E13 What is the most important reason why you have (never had a mammogram/not had a mammogram in the past two years)?

- ☐ 1 no reason/never thought about it/didn't know I should
  - ☐ 2 not needed/haven't had any problems
  - ☐ 3 put it off/laziness
  - ☐ 4 costs too much/no insurance
  - ☐ 5 doctor didn't recommend it
  - ☐ 6 don't go to or don't like doctors
  - ☐ 7 afraid exam would be painful
  - ☐ 8 afraid x-rays would be harmful to my health
  - ☐ 9 afraid to find out I have cancer
  - ☐ 10 Other (SPECIFY) \_\_\_\_\_
- 

- ☐ 98 DK
- ☐ 99 RF

E14 How likely is it that you will have a mammogram in the next 12 months? Would you say it is..

- ☐ 1 very likely
- ☐ 2 somewhat likely
- ☐ 3 not very likely
- ☐ 4 not likely at all
- ☐ 98 DK
- ☐ 99 RF

E15 Have any of your family members ever encouraged you to have a mammogram?

\_\_\_ 1 yes ⇨ **ASK E15a**

\_\_\_ 2 no  
 \_\_\_ 98 DK } **Go to E16**  
 \_\_\_ 99 RF

E15a Which family members have ever encouraged you to have a mammogram?  
**PROBE AFTER EACH RESPONSE: "Has anyone else encouraged you to have a mammogram?" [MULTIPLE RECORD IF NECESSARY]**

\_\_\_ 1 husband  
 \_\_\_ 2 daughter  
 \_\_\_ 3 mother  
 \_\_\_ 4 sister  
 \_\_\_ 5 son  
 \_\_\_ 6 daughter-in-law  
 \_\_\_ 7 granddaughter  
 \_\_\_ 8 niece  
 \_\_\_ 9 another family member (SPECIFY RELATIONSHIP) \_\_\_\_\_  
 \_\_\_ 98 DK  
 \_\_\_ 99 RF

E16 Has anyone other than a family member ever encouraged you to have a mammogram?

\_\_\_ 1 yes ⇨ **ASK E16a**

\_\_\_ 2 no  
 \_\_\_ 98 DK } **GO TO E17**  
 \_\_\_ 99 RF

E16a Other than a family member, who has encouraged you to have a mammogram?  
**PROBE AFTER EACH RESPONSE: "Has anyone else encouraged you to have a mammogram?" [MULTIPLE RECORD IF NECESSARY]**

\_\_\_ 1 a friend  
 \_\_\_ 2 a doctor  
 \_\_\_ 3 a nurse  
 \_\_\_ 4 another health professional  
 \_\_\_ 5 someone else (SPECIFY RELATIONSHIP) \_\_\_\_\_  
 \_\_\_ 6 no one  
 \_\_\_ 98 DK  
 \_\_\_ 99 RF

E17 How likely would you be to go for a mammogram...[READ EACH QUESTION]  
Would you be...; [SHOW CARD]

	very likely	somewhat likely	not very likely	not at all likely	DK	RF
a. Without having a problem or without being asked by a doctor?						
b. If you were urged by a church program?						
c. [SKIP IF NOT MARRIED IN QA6] if your husband suggested you get one?						
d. if any other relative or family member suggested you get one?						
e. if a friend recommended that you get one?						
f. if a doctor recommended that you get one?						

E18 Is there anything else that would motivate you to get a mammogram?

\_\_\_\_ 1 yes, (SPECIFY) \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_ 2 no  
\_\_\_\_ 98 DK  
\_\_\_\_ 99 RF

E19 What do you consider to be the main obstacle for women your age to get a mammogram?

- ☐ 1 no reason/never thought about it
- ☐ 2 not needed/haven't had any problems
- ☐ 3 put it off/laziness
- ☐ 4 costs too much/no insurance
- ☐ 5 doctor didn't recommend it
- ☐ 6 don't go to or don't like doctors
- ☐ 7 afraid exam would be painful
- ☐ 8 afraid x-rays would be harmful to health
- ☐ 9 afraid to find out they have cancer
- ☐ 10 unaware of benefits of screening
- ☐ 11 Other, (SPECIFY) \_\_\_\_\_

\_\_\_\_ 98 DK

\_\_\_\_ 99 RF

## BREAST PHYSICAL EXAMS

The next set of questions are about breast (physical) exams. A breast physical exam is when the breast is felt for lumps by a doctor or other health professional.

E20 Have you ever had a breast physical examination done by a doctor or other health professional?

\_\_\_ 1 yes ⇨ **ASK E21**

\_\_\_ 2 no  
 \_\_\_ 98 DK } **(GO TO E22)**  
 \_\_\_ 99 RF

E21 When did you have your most recent breast physical exam?

\_\_\_ SPECIFIED DATE: \_\_\_ 19 \_\_\_  
                                     MONTH      YEAR

\_\_\_ Time since \_\_\_ days   weeks   months   years   AGO } **Go to E22**  
                                     (Circle correct time since)

\_\_\_ 98 DK ⇨ **ASK Q.E21a**  
 \_\_\_ 99 RF

E21a If DK then probe: Was it less than 1 year ago, at least 1 year but less than 2 years ago, or 2 or more years ago?

\_\_\_ 1 less than 1 year ago  
 \_\_\_ 2 at least 1 year but less than 2 years ago  
 \_\_\_ 3 2 or more years ago  
 \_\_\_ 98 DK  
 \_\_\_ 99 RF

## BREAST SELF EXAMINATION

E22 Do you examine your breasts for lumps?

\_\_\_ 1 yes ⇨ Ask Q.E23

\_\_\_ 2 no  
 \_\_\_ 98 DK } [GO TO F1]  
 \_\_\_ 99 RF

E23 About how often do you examine your breasts for lumps?

\_\_\_ (number of times) per (day week month year)  
*(Circle correct time)*

\_\_\_ 5 never  
 \_\_\_ 98 DK  
 \_\_\_ 99 RF

E24 How did you learn how to examine your breasts? [Check all that apply]

\_\_\_ 1 doctor showed me  
 \_\_\_ 2 nurse showed me  
 \_\_\_ 3 friend showed me  
 \_\_\_ 4 other health professional showed me  
 \_\_\_ 5 learned in a class/meeting  
 \_\_\_ 6 read in a book, pamphlet, etc.  
 \_\_\_ 7 saw a television program  
 \_\_\_ 8 saw a video  
 \_\_\_ 9 my mother showed me  
 \_\_\_ 10 my sister showed me  
 \_\_\_ 11 my daughter showed me  
 \_\_\_ 12 other female relative showed me  
 \_\_\_ 13 other (SPECIFY) \_\_\_\_\_  
 \_\_\_ 98 DK  
 \_\_\_ 99 RF

## F. PAP SMEARS

F1 A pap smear is a routine test in which a doctor examines the cervix to check for cancer of the cervix. Have you ever had a pap smear?

\_\_\_ 1 yes, have had ⇨ **ASK F2**

\_\_\_ 2 no, have not had }  
 \_\_\_ 98 DK } **(GO TO G1)**  
 \_\_\_ 99 RF }

F2 How many pap smears have you had in the past 10 years?

\_\_\_ pap smears

\_\_\_ 98 DK  
 \_\_\_ 99 RF

F3 When did you have your (most recent) pap smear?

\_\_\_ SPECIFIED DATE: \_\_\_ 19 \_\_\_  
                                     MONTH      YEAR

\_\_\_ Time since \_\_\_ days    weeks    months    years    **AGO** } **Go to F4**  
                                     (Circle correct time since)

\_\_\_ 98 DK ⇨ **ASK Q.F3a**  
 \_\_\_ 99 RF

F3a If DK then probe: Was it less than 1 year ago, at least 1 year but less than 2 years ago, or 2 or more years ago?

\_\_\_ 1 less than 1 year ago  
 \_\_\_ 2 at least 1 year but less than 2 years ago  
 \_\_\_ 3 2 or more years ago  
 \_\_\_ 98 DK  
 \_\_\_ 99 RF

F4 Was your last pap smear done because of a health problem or just as part of a routine check-up?

\_\_\_ 1 health problem ⇨ **Ask Q.F5**

\_\_\_ 2 routine check-up }  
 \_\_\_ 98 DK } **(GO TO G1)**  
 \_\_\_ 99 RF }

F5 What was the problem? [MULTIPLE RECORD]

\_\_\_ 1 bleeding

\_\_\_ 2 burning

\_\_\_ 3 discharge

\_\_\_ 4 infection

\_\_\_ 5 itching

\_\_\_ 6 pain

\_\_\_ 7 other (SPECIFY) \_\_\_\_\_

\_\_\_ 98 DK

\_\_\_ 99 RF

## G. CANCER KNOWLEDGE/AWARENESS

Now I would like to ask you a few questions about breast cancer in general. There are no right or wrong responses. We care about your opinions.

- G1 What is the age doctors recommend a woman should start having mammograms?  
**[ENCOURAGE RESPONDENT TO GUESS EVEN IF SHE IS NOT SURE OR DOESN'T KNOW]**

\_\_\_\_\_ years old

OR

- \_\_\_\_\_ 1 when she starts having periods  
 \_\_\_\_\_ 2 when she stops having periods  
 \_\_\_\_\_ 3 controversial - doctors do not agree  
 \_\_\_\_\_ 4 other (SPECIFY) \_\_\_\_\_  
 \_\_\_\_\_ 98 DK  
 \_\_\_\_\_ 99 RF

- G2 How often do you think a woman of your age should have a mammogram?

- \_\_\_\_\_ 1 yearly  
 \_\_\_\_\_ 2 every 2 years  
 \_\_\_\_\_ 3 when the doctor says so  
 \_\_\_\_\_ 4 never  
 \_\_\_\_\_ 5 other (SPECIFY) \_\_\_\_\_  
 \_\_\_\_\_ 98 DK  
 \_\_\_\_\_ 99 RF

- G3 Is there an age when women no longer need to have mammograms?  
**[ENCOURAGE RESPONDENT TO GUESS EVEN IF SHE IS NOT SURE OR DOESN'T KNOW]**

\_\_\_\_\_ years old

OR

- \_\_\_\_\_ 1 when menstrual periods stop  
 \_\_\_\_\_ 2 when she is no longer sexually active  
 \_\_\_\_\_ 3 there is no age limit  
 \_\_\_\_\_ 98 DK  
 \_\_\_\_\_ 99 RF

G4 If a close family member had cancer, should only that person be told, only the family, both the person and the family, or should no one be told?

- ☐ 1 only the person her/himself
- ☐ 2 only other family members
- ☐ 3 both the person and the family
- ☐ 4 no one
- ☐ 5 depends on situation
- ☐ 98 DK
- ☐ 99 RF

G5 What are a person's chances of surviving cancer of the breast if it is found and treated early? Would you say

- ☐ 1 good : greater than a 50-50 chance
- ☐ 2 fair : about a 50-50 chance
- ☐ 3 poor : less than a 50-50 chance
- ☐ 98 DK
- ☐ 99 RF

G6 How much do you worry about getting breast cancer? Would you say

- ☐ 1 a lot
- ☐ 2 some
- ☐ 3 not at all
- ☐ 98 DK
- ☐ 99 RF

G7 Do you worry about any of your female relatives (e.g., daughters, daughters-in-law, nieces, sisters, mother, aunts) getting breast cancer?

- ☐ 1 Yes
- ☐ 2 No
- ☐ 98 DK
- ☐ 99 RF

## H. RELIANCE AND SOLIDARITY: PART 1

H1 Among the members of your family, who do you rely on the most for advice on health matters?

Name: \_\_\_\_\_

Relationship: \_\_\_\_\_

Age: \_\_\_\_\_

Gender \_\_\_\_\_

\_\_\_\_ 0 No family member identified

\_\_\_\_ 98 DK

\_\_\_\_ 99 RF

IF SUBJECT DOES NOT IDENTIFY A FAMILY MEMBER OR IDENTIFIES HUSBAND,  
GO TO Q I.1

H2 Does \_\_\_\_\_ (NAME OF PERSON) live within 1 hour of you?

\_\_\_\_ 1 yes, lives within 1 hour from subject

\_\_\_\_ 2 no, does not live within 1 hour from subject

\_\_\_\_ 98 DK

\_\_\_\_ 99 RF

H3 Where does \_\_\_\_\_ (NAME OF PERSON) live? [PROMPT FOR TOWN]

\_\_\_\_ REFER TO LIST OF TOWNS

\_\_\_\_ OTHER TOWN (SPECIFY; DO NOT ABBREVIATE) \_\_\_\_\_

\_\_\_\_ 98 DK

\_\_\_\_ 99 RF

H4 About how often have you seen \_\_\_\_\_ (NAME OF PERSON) in the past month?

\_\_\_\_ 1 almost never or never

\_\_\_\_ 2 once or twice

\_\_\_\_ 3 about once a week

\_\_\_\_ 4 several times a week

\_\_\_\_ 5 almost every day or every day

\_\_\_\_ 98 DK

\_\_\_\_ 99 RF

H4a How often have you spoken with \_\_\_\_\_ (NAME OF PERSON) by phone in the past month?

- \_\_\_\_\_ 1 almost never or never
- \_\_\_\_\_ 2 once or twice
- \_\_\_\_\_ 3 about once a week
- \_\_\_\_\_ 4 several times a week
- \_\_\_\_\_ 5 almost every day or every day
- \_\_\_\_\_ 6 no phone
- \_\_\_\_\_ 98 DK
- \_\_\_\_\_ 99 RF

H5 Where does \_\_\_\_\_ (NAME) go for most of (her/his) health care?

- \_\_\_\_\_ 1 doctor's office
- \_\_\_\_\_ 2 hospital emergency room
- \_\_\_\_\_ 3 hospital outpatient clinic
- \_\_\_\_\_ 4 public health clinic
- \_\_\_\_\_ 5 HMO/prepaid group practice
- \_\_\_\_\_ 6 clinic at any work place
- \_\_\_\_\_ 7 no particular place
- \_\_\_\_\_ 8 Hasn't needed health care
- \_\_\_\_\_ 9 other (SPECIFY) \_\_\_\_\_
- \_\_\_\_\_ 98 DK
- \_\_\_\_\_ 99 RF

**I. LIVING ARRANGEMENT**

- I1 Including yourself, how many people live in this household? [COUNT EVERYONE LIVING IN HOUSEHOLD, INCLUDING CHILDREN AND INDIVIDUALS NOT RELATED TO SUBJECT]

\_\_\_\_ (people)

\_\_\_\_ 98 DK

\_\_\_\_ 99 RF

**IF ONLY ONE PERSON IN Q.I1, GO TO Q.J1 ALL OTHERS ASK Q.I2**

- I2 How many of these are under 21 years of age?

\_\_\_\_ number under 21

\_\_\_\_ 98 DK

\_\_\_\_ 99 RF

**J. FAMILY CONTACTS/SOCIAL SUPPORT**

Now I am going to ask you a few questions about your family and friends.

- J1 How many living sons do you have, including adopted, foster and step-sons?

\_\_\_\_ number of sons

\_\_\_\_ 0 None }  
 \_\_\_\_ 98 DK } **Go to J2**  
 \_\_\_\_ 99 RF }

- J1a How many of your sons are [If 1 son, ask "Is your son..."] less than 18 years of age?

\_\_\_\_ . Less than 18 years of age

\_\_\_\_ 98 DK

\_\_\_\_ 99 RF

J1b How many of your sons are [If 1 son, ask "Is your son..."] 18 - 35 years of age?

\_\_\_\_\_ 18-35 years of age

\_\_\_\_\_ 98 DK

\_\_\_\_\_ 99 RF

J1c How many of your sons are [If 1 son, ask "Is your son..."] older than 35 years of age?

\_\_\_\_\_ >35 years of age

\_\_\_\_\_ 98 DK

\_\_\_\_\_ 99 RF

J1d How many of your sons have you seen in the last month?

\_\_\_\_\_ sons seen in last month

\_\_\_\_\_ 98 DK

\_\_\_\_\_ 99 RF

J1e How many of your sons have you talked to by phone in the last month?

\_\_\_\_\_ sons talked to by phone in last month

\_\_\_\_\_ 98 DK

\_\_\_\_\_ 99 RF

J2 How many living daughters do you have, including adopted, foster and step-daughters?

\_\_\_\_\_ number of daughters

\_\_\_\_\_ 0 None } GO TO K1

\_\_\_\_\_ 98 DK }

\_\_\_\_\_ 99 RF }

J2a How many of your daughters are [If 1 daughter, ask "Is your daughter..."] less than 18 years of age?

\_\_\_\_\_ Less than 18 years of age

\_\_\_\_\_ 0 None

\_\_\_\_\_ 98 DK

\_\_\_\_\_ 99 RF

J2b How many of your daughters are [If 1 daughter, ask "Is your daughter..."] 18-35 years of age?

\_\_\_\_\_ 18-35 years of age

\_\_\_\_\_ 98 DK

\_\_\_\_\_ 99 RF

J2c How many of your daughters are [If 1 daughter, ask "Is your daughter..."] older than 35 years of age?

\_\_\_\_\_ >35 years of age

\_\_\_\_\_ 98 DK

\_\_\_\_\_ 99 RF

J2d Of these [INSERT # FROM J2b] daughters 18-35, how many live within hour from you?

\_\_\_\_\_ number of daughters < 1 hour

\_\_\_\_\_ 98 DK

\_\_\_\_\_ 99 RF

J2e How many of your daughters have you seen in the last month?

\_\_\_\_\_ daughters seen in last month

\_\_\_\_\_ 98 DK

\_\_\_\_\_ 99 RF

J2f How many of your daughters have you talked to by phone in the past month?

\_\_\_\_\_ daughters talked to by phone in last month

\_\_\_\_\_ 98 DK

\_\_\_\_\_ 99 RF

## K. RELIANCE AND SOLIDARITY: PART 2

- K1 How many other female family members between the ages of 18 - 35 do you have? [INCLUDING DAUGHTERS-IN-LAW, NIECES, SISTERS, AND GOD-DAUGHTERS]

\_\_\_\_\_ number of female family members

\_\_\_\_\_ 0 None }  
 \_\_\_\_\_ 98 DK } GO TO K3  
 \_\_\_\_\_ 99 RF

- K2 Of these [Insert # from K1] female family members, how many live/does this family member live within 1 hour from you?

\_\_\_\_\_ number of female family members

\_\_\_\_\_ 98 DK  
 \_\_\_\_\_ 99 RF

- K3 With how many of your relatives do you feel very close to? Include parents, husband, children, brothers or sisters, aunts or uncles, or other relatives with whom you feel very close to.

\_\_\_\_\_ number of very close relatives

\_\_\_\_\_ 98 DK  
 \_\_\_\_\_ 99 RF

- K4 With how many of your relatives do you feel somewhat close to? Include parents, husband, children, brothers or sisters, aunts or uncles, or other relatives with whom you feel somewhat close to.

\_\_\_\_\_ number of somewhat close relatives

\_\_\_\_\_ 98 DK  
 \_\_\_\_\_ 99 RF

- K5 In general, how many close friends do you have, other than relatives? (People with whom you feel comfortable, with whom you can talk about private matters, and whom you can call to ask for help)

\_\_\_ \_\_\_ number of close friends

\_\_\_ 98 DK

\_\_\_ 99 RF

- K6 In general, how many other people, excluding people you have mentioned, do you feel that you can talk to or ask for advice or information? (People you work with, from church, other activities)

\_\_\_ \_\_\_ number of other people

\_\_\_ 98 DK

\_\_\_ 99 RF

# L. RELIANCE AND SOLIDARITY: PART 3

L1 How many female friends between the ages of 18 and 35 do you have?

\_\_\_\_\_ number of female friends 18-35

\_\_\_\_\_ 0 None  
 \_\_\_\_\_ 98 DK  
 \_\_\_\_\_ 99 RF

} GO TO L3

L2 How many of these [insert # from L1] friends/does this friend live within 1 hour from you?

\_\_\_\_\_ number within 1 hour

\_\_\_\_\_ 0 None  
 \_\_\_\_\_ 98 DK  
 \_\_\_\_\_ 99 RF

L3 [IF PERSON MENTIONED IN H1 IS A FEMALE, 18 - 35 YEARS OF AGE AND LIVES WITHIN 1 HOUR FROM SUBJECT (H2=1), THEN GO TO L5]

\_\_\_\_\_ 1. [If  $J2d + K2 + L2 = 0$  then go to M1]

\_\_\_\_\_ 2. [If  $J2d + K2 + L2 = 1$  THEN ASK L3a]

\_\_\_\_\_ 3. [If  $J2d + K2 + L2 > 1$  THEN ASK L3b]

L3a What is the age and name of your daughter ( $J2d=1$ ), female relative ( $K2=1$ ), or female friend ( $L2=1$ ) who is between the ages of 18 and 35 and lives within 1 hour from you?

Name: \_\_\_\_\_ Age: \_\_\_\_\_

Relationship: \_\_\_\_\_

\_\_\_\_\_ 98 DK  
 \_\_\_\_\_ 99 RF

} GO TO L4

- L3b Of the [insert # J2d] daughter(s), the [insert # from K2] female relative(s) and [insert # from L2] female friend(s) you have mentioned who are between the ages of 18 and 35 and live within 1 hour from you, whom do you rely on the most for advice on health matters,? [IF SUBJECT SAYS THEY DON'T RELY ON ANY, ASK WHO THEY WOULD RELY ON IF THEY HAD TO; IF UNABLE TO NAME SOMEONE GO TO M1 IF MARRIED; IF NOT MARRIED GO TO N1]

Name: \_\_\_\_\_ Age: \_\_\_\_\_

Relationship: \_\_\_\_\_

\_\_\_\_ 0 No one  
 \_\_\_\_ 98 DK  
 \_\_\_\_ 99 RF

- L4 Where does \_\_\_\_\_ (NAME OF PERSON) live? [PROMPT FOR TOWN]

\_\_\_\_ REFER TO LIST OF TOWNS

\_\_\_\_ Other (SPECIFY; DO NOT ABBREVIATE) \_\_\_\_\_

\_\_\_\_ 98 DK  
 \_\_\_\_ 99 RF

#### AFFECTUAL SOLIDARITY

- L5 Generally, how well do you and \_\_\_\_\_ (NAME) get along together?

\_\_\_\_ 1 extremely well  
 \_\_\_\_ 2 very well  
 \_\_\_\_ 3 pretty well  
 \_\_\_\_ 4 somewhat  
 \_\_\_\_ 5 not too well  
 \_\_\_\_ 6 not well  
 \_\_\_\_ 98 DK  
 \_\_\_\_ 99 RF

## ASSOCIATIONAL SOLIDARITY

L6 How often do you do the following with \_\_\_\_\_ (NAME OF PERSON)? [SHOW CARD]

	Almost never or never	About once a year	Several times a year	Every other month or so	About once a month	About once a week	Several times a week	Almost every day	DK	RF
a. Have recreation outside the home (movies, picnics, swimming, trips etc...)?	1	2	3	4	5	6	7	8	98	99
b. Have visits just to talk?	1	2	3	4	5	6	7	8	98	99
c. Have family gatherings like birthdays, holidays or other special occasions where a lot of family members get together?	1	2	3	4	5	6	7	8	98	99
d. Talk over things that are important to you?	1	2	3	4	5	6	7	8	98	99
e. Go to religious activities of any kind?	1	2	3	4	5	6	7	8	98	99
f. Telephone each other? <sup>1</sup>	1	2	3	4	5	6	7	8	98	99
g. Have dinner together?	1	2	3	4	5	6	7	8	98	99

1 - IF NO TELEPHONE = CODE 9

L7 How often do you

a. Help \_\_\_\_\_(NAME) out with her chores or errands? [SHOW CARD]

- \_\_\_\_\_ 1 almost never or never
- \_\_\_\_\_ 2 about once a year
- \_\_\_\_\_ 3 several times a year
- \_\_\_\_\_ 4 every other month or so
- \_\_\_\_\_ 5 about once a month
- \_\_\_\_\_ 6 about once a week
- \_\_\_\_\_ 7 several times a week
- \_\_\_\_\_ 8 almost every day
- \_\_\_\_\_ 98 DK
- \_\_\_\_\_ 99 RF

b. How often does \_\_\_\_\_(NAME) help you out with chores or errands?  
[SHOW CARD]

- \_\_\_\_\_ 1 almost never or never
- \_\_\_\_\_ 2 about once a year
- \_\_\_\_\_ 3 several times a year
- \_\_\_\_\_ 4 every other month or so
- \_\_\_\_\_ 5 about once a month
- \_\_\_\_\_ 6 about once a week
- \_\_\_\_\_ 7 several times a week
- \_\_\_\_\_ 8 almost every day
- \_\_\_\_\_ 98 DK
- \_\_\_\_\_ 99 RF

L8 How often do you help \_\_\_\_\_(NAME) when she is sick?

- \_\_\_\_\_ 1 every time she is sick
- \_\_\_\_\_ 2 usually when she is sick
- \_\_\_\_\_ 3 sometimes when she is sick
- \_\_\_\_\_ 4 never
- \_\_\_\_\_ 5 never sick
- \_\_\_\_\_ 98 DK
- \_\_\_\_\_ 99 RF

L9 How often does \_\_\_\_\_(NAME) help you when you are sick?

- \_\_\_ 1 every time I am sick
- \_\_\_ 2 usually when I am sick
- \_\_\_ 3 sometimes when I am sick
- \_\_\_ 4 never when I am sick
- \_\_\_ 5 never sick
- \_\_\_ 98 DK
- \_\_\_ 99 RF

L10 In the past year, have you given \_\_\_\_\_(NAME) any financial help?

- \_\_\_ 1 yes, have given financial help ⇨ Ask L10a
  - \_\_\_ 2 no, have not given help
  - \_\_\_ 98 DK
  - \_\_\_ 99 RF
- } Go to L11

L10a Have you given (NAME) financial help regularly, occasionally, or only rarely?

- \_\_\_ 1 regularly
- \_\_\_ 2 occasionally
- \_\_\_ 3 only rarely
- \_\_\_ 98 DK
- \_\_\_ 99 RF

L11 In the past year, have you received any financial help from \_\_\_\_\_(NAME)?

- \_\_\_ 1 yes, have received financial help ⇨ Ask L11a
  - \_\_\_ 2 no, have not received help
  - \_\_\_ 98 DK
  - \_\_\_ 99 RF
- } Go to L12

L11a Have you received financial help from (NAME) regularly, occasionally, or only rarely?

- \_\_\_ 1 regularly
- \_\_\_ 2 occasionally
- \_\_\_ 3 only rarely
- \_\_\_ 98 DK
- \_\_\_ 99 RF

L12 How often do you give any advice to \_\_\_\_\_(NAME) regarding health?

- \_\_\_ 1 almost never or never
- \_\_\_ 2 about once a year
- \_\_\_ 3 several times a year
- \_\_\_ 4 every other month or so
- \_\_\_ 5 about once a month
- \_\_\_ 6 about once a week
- \_\_\_ 7 several times a week
- \_\_\_ 8 almost every day
- \_\_\_ 98 DK
- \_\_\_ 99 RF

L13 How often does \_\_\_\_\_(NAME) give you any advice regarding your health?

- \_\_\_ 1 almost never or never
- \_\_\_ 2 about once a year
- \_\_\_ 3 several times a year
- \_\_\_ 4 every other month or so
- \_\_\_ 5 about once a month
- \_\_\_ 6 about once a week
- \_\_\_ 7 several times a week
- \_\_\_ 8 almost every day
- \_\_\_ 98 DK
- \_\_\_ 99 RF

L14 Do you always follow her advice, almost always, sometimes, almost never, or never?

- \_\_\_ 1 always
- \_\_\_ 2 almost always
- \_\_\_ 3 sometimes
- \_\_\_ 4 almost never
- \_\_\_ 5 never
- \_\_\_ 98 DK
- \_\_\_ 99 RF

L14a How likely would you be to go for a mammogram if \_\_\_\_\_(name) suggested you get one? Would you be. . .

- \_\_\_\_\_ 1 very likely
- \_\_\_\_\_ 2 somewhat likely
- \_\_\_\_\_ 3 not very likely
- \_\_\_\_\_ 4 not at all likely
- \_\_\_\_\_ 98 DK
- \_\_\_\_\_ 99 RF

L15 Where does \_\_\_\_\_(NAME) go for most of her health care?

- \_\_\_\_\_ 0 nowhere ⇨ GO TO INSTRUCTIONS ABOVE M1
- \_\_\_\_\_ 1 no usual place ⇨ ASK L15a AS "PLACE GONE MOST OFTEN"
- \_\_\_\_\_ 2 doctor's office
- \_\_\_\_\_ 3 hospital outpatient clinic
- \_\_\_\_\_ 4 hospital emergency room
- \_\_\_\_\_ 5 clinic
- \_\_\_\_\_ 6 haven't needed health care ⇨ GO TO INSTRUCTIONS ABOVE M1
- \_\_\_\_\_ 7 other \_\_\_\_\_
- \_\_\_\_\_ 98 DK
- \_\_\_\_\_ 99 RF

L15a What is the name of this place where \_\_\_\_\_(NAME) goes for her health care? [INTERVIEWER: PROBE FOR FULL NAME. DO NOT ABBREVIATE]

\_\_\_\_\_

\_\_\_\_\_

- \_\_\_\_\_ 98 DK
- \_\_\_\_\_ 99 RF

IF RESPONDENT NOT CURRENTLY MARRIED, SKIP TO Q.N1

### M. MARITAL SATISFACTION

Now, I am going to read a list of things that husbands and wives may do when they are together. For each, could you tell me how often it happens between you and your husband. **[SHOW CARD]**

		Hardly ever or never	Not usually but sometimes	Fairly often	Quite often	Very often or all the time	DK	RF
<b>M1</b>	You calmly discuss something together.	1	2	3	4	5	98	99
<b>M2</b>	One of you is sarcastic.	1	2	3	4	5	98	99
<b>M3</b>	You work together on something (dishes, yardwork, etc.).	1	2	3	4	5	98	99
<b>M4</b>	One of you refuses to talk in a normal manner.	1	2	3	4	5	98	99
<b>M5</b>	You laugh together.	1	2	3	4	5	98	99
<b>M6</b>	You have an interesting exchange of ideas.	1	2	3	4	5	98	99
<b>M7</b>	You disagree about something important.	1	2	3	4	5	98	99
<b>M8</b>	One of you becomes critical or belittling.	1	2	3	4	5	98	99
<b>M9</b>	You have a good time together.	1	2	3	4	5	98	99
<b>M10</b>	One of you becomes angry.	1	2	3	4	5	98	99

M11 Overall, how would you rate your HUSBAND'S health -- excellent, good, fair, or poor?

- ☐ 1 excellent
- ☐ 2 good
- ☐ 3 fair
- ☐ 4 poor
- ☐ 98 DK
- ☐ 99 DF

M12 When your husband wants help with care for a physical health problem, where does he usually go?

- ☐ 0 nowhere
- ☐ 1 no usual place
- ☐ 2 doctor's office
- ☐ 3 hospital outpatient clinic
- ☐ 4 hospital emergency room
- ☐ 5 clinic
- ☐ 6 hasn't needed health care
- ☐ 7 other (SPECIFY) \_\_\_\_\_
- ☐ 98 DK
- ☐ 99 RF

M13 How often do you accompany your husband when he goes to see a doctor?  
Would you say...

- ☐ 1 Always
- ☐ 2 Usually
- ☐ 3 Sometimes
- ☐ 4 Rarely
- ☐ 5 Never
- ☐ 98 DK
- ☐ 99 RF

M13a How often does your husband accompany you when you see a doctor? Would you say...

- ☐ 1 Always
- ☐ 2 Usually
- ☐ 3 Sometimes
- ☐ 4 Rarely
- ☐ 5 Never
- ☐ 98 DK
- ☐ 99 RF

M14 How often do you and your husband discuss health problems with one another?  
Would you say...

- ☐ 1 Always
- ☐ 2 Usually
- ☐ 3 Sometimes
- ☐ 4 Rarely
- ☐ 5 Never
- ☐ 98 DK
- ☐ 99 RF

## N. ACCULTURATION - CUELLAR and HAZUDA SCALES

In this next part of the interview, I will be asking some more questions about your background, attitudes, and beliefs. First, I'm going to ask you about your use of language, in particular, English and Spanish, in various situations.

N1 What was the first language that you learned to speak?

- ☐ 1 English
- ☐ 2 English and Spanish simultaneously
- ☐ 3 Spanish
- ☐ 4 Other (Specify) \_\_\_\_\_
- ☐ 98 DK
- ☐ 99 RF

N2 What language was spoken in your home when you were a child? Would you say:  
[SHOW CARD]

- ☐ 1 Only English
- ☐ 2 Mostly English
- ☐ 3 Spanish and English equally
- ☐ 4 Mostly Spanish
- ☐ 5 Only Spanish
- ☐ 6 Other (Specify) \_\_\_\_\_
- ☐ 98 DK
- ☐ 99 RF

N3 In your opinion, how well do you: [SHOW CARD]

	Very Well	Pretty Well	Not Too Well	Not At All Well	DK	RF
Understand spoken English						
Speak English						
Read English						
Write English						
Understand spoken Spanish						
Speak Spanish						
Read Spanish						
Write Spanish						

N4 What language do you usually use: **[SHOW CARD]**

	Only English	Mostly English	Both Equally	Mostly Spanish	Only Spanish	DK	RF	NA
a. With your spouse?								
b. With your children?								
c. With your parents?								
d. With most of your friends?								
e. With most of your neighbors?								
f. With most of the people at work?								
g. At family gatherings, such as Christmas or other holidays?								

N5 In what language are the: **[SHOW CARD]**

	Only English	Mostly English	Both Equally	Mostly Spanish	Only Spanish	DK	RF	NA
a. TV programs you watch								
b. Radio stations you listen to								
c. Books and magazines you read								

N6 How important do you feel it is for (your) children to know something about the history of Mexico? Would you say . . .?

- ☐ 1 very important
- ☐ 2 somewhat important
- ☐ 4 not very important
- ☐ 5 not important at all

- ☐ 3 not sure
- ☐ 99 refused

N7 How important do you feel it is for (your) children to follow Mexican customs and ways of life?

- ☐ 1 very important
- ☐ 2 somewhat important
- ☐ 4 not very important
- ☐ 5 not important at all

- ☐ 3 not sure
- ☐ 99 refused

N8 How important do you feel it is for (your) children to celebrate Mexican holidays such as Cinco de Mayo or El Diesyseis de Septiembre?

- ☐ 1 very important
- ☐ 2 somewhat important
- ☐ 4 not very important
- ☐ 5 not important at all

- ☐ 3 not sure
- ☐ 99 refused

Now I would like you to turn your attention to some of the preferences and beliefs that you have about life in general. The first questions ask about family life - the way that families are organized and the way that members of a family work with one another. Think carefully about each statement that I read and then tell me **(SHOW CARD)** whether you strongly agree with the statement, agree, disagree or strongly disagree with the statement. There are no right or wrong answers; we would just like to know how you yourself feel about these statements. The first statement is:

N9 Knowing your family ancestry or lineage, that is, tracing your family tree, is an important part of family life. Would you say you...

- ☐ 1 strongly agree
- ☐ 2 agree
- ☐ 4 disagree
- ☐ 5 strongly disagree

- ☐ 3 not sure
- ☐ 99 RF

N10 It is important to know your cousins, aunts, and uncles and to have a close relationship with them.

- ☐ 1 strongly agree
- ☐ 2 agree
- ☐ 4 disagree
- ☐ 5 strongly disagree

- ☐ 3 not sure
- ☐ 99 RF

N11 Brothers have a responsibility to protect their sisters while they are growing up.

- ☐ 1 strongly agree
- ☐ 2 agree
- ☐ 4 disagree
- ☐ 5 strongly disagree

- ☐ 3 not sure
- ☐ 99 RF

N12 A person should remember other family members who have passed away on the anniversary of their death, All Soul's Day, or other special occasions.

\_\_\_\_ 1 strongly agree  
\_\_\_\_ 2 agree  
\_\_\_\_ 4 disagree  
\_\_\_\_ 5 strongly disagree

\_\_\_\_ 3 not sure  
\_\_\_\_ 99 RF

N13 In the absence of the father, the most important decisions should be made by the eldest son rather than the mother, if the son is old enough.

\_\_\_\_ 1 strongly agree  
\_\_\_\_ 2 agree  
\_\_\_\_ 4 disagree  
\_\_\_\_ 5 strongly disagree

\_\_\_\_ 3 not sure  
\_\_\_\_ 99 RF

N14 If they could live anywhere they wanted to, married children should live close to their parents so that they can help each other.

\_\_\_\_ 1 strongly agree  
\_\_\_\_ 2 agree  
\_\_\_\_ 4 disagree  
\_\_\_\_ 5 strongly disagree

\_\_\_\_ 3 not sure  
\_\_\_\_ 99 RF

N15 While they're growing up, sisters have an obligation to respect their brothers' authority.

\_\_\_\_ 1 strongly agree  
\_\_\_\_ 2 agree  
\_\_\_\_ 4 disagree  
\_\_\_\_ 5 strongly disagree

\_\_\_\_ 3 not sure  
\_\_\_\_ 99 RF

Now I would like to ask you some questions about your neighbors and friends when you were growing up.

N16 When you were growing up, were your neighbors mostly Mexican or Mexican-American, mostly Anglo, or about equal numbers of each?

- ☐ 1 Mostly Mexican or Mexican-American
- ☐ 2 Mostly Anglo
- ☐ 3 About equal numbers of each
- ☐ 4 Other (Specify) \_\_\_\_\_
- ☐ 98 DK
- ☐ 99 RF

N17 When you were growing up, were your school mates mostly Mexican or Mexican-American, mostly Anglo, or about equal numbers of each?

- ☐ 1 Mostly Mexican or Mexican-American
- ☐ 2 Mostly Anglo
- ☐ 3 About equal numbers of each
- ☐ 4 Other (Specify) \_\_\_\_\_
- ☐ 98 DK
- ☐ 99 RF

N18 When you were growing up, were your close personal friends mostly Mexican or Mexican-American, mostly Anglo, or about equal numbers of each?

- ☐ 1 Mostly Mexican or Mexican-American
- ☐ 2 Mostly Anglo
- ☐ 3 About equal numbers of each
- ☐ 4 Other (Specify) \_\_\_\_\_
- ☐ 98 DK
- ☐ 99 RF

Now I would like to ask you some questions about the people you see most often, day to day. [IF NEVER WORKED GO TO N20]

N19 (Are the people with whom you work closely on the job/Are the people with whom you worked closely on your last job) mostly Mexican or Mexican-American, mostly Anglo, or about equal numbers of each?

- ☐ 1 Mostly Mexican or Mexican-American
- ☐ 2 Mostly Anglo
- ☐ 3 About equal numbers of each
- ☐ 4 Other (Specify) \_\_\_\_\_
- ☐ 5 Never worked
- ☐ 98 don't know
- ☐ 99 refused

N20 Throughout most of your adult life, have your neighbors been mostly Mexican or Mexican-American, mostly Anglo, or about equal numbers of each?

- ☐ 1 Mostly Mexican or Mexican-American
- ☐ 2 Mostly Anglo
- ☐ 3 About equal numbers of each
- ☐ 4 other (Specify) \_\_\_\_\_
- ☐ 98 don't know
- ☐ 99 refused

N21 Throughout your adult life, have your close, personal friends been mostly Mexican or Mexican-American, mostly Anglo, or about equal numbers of each?

- ☐ 1 Mostly Mexican or Mexican American
- ☐ 2 Mostly Anglo
- ☐ 3 about equal numbers of each
- ☐ 4 other (Specify) \_\_\_\_\_
- ☐ 98 don't know
- ☐ 99 refused

# P. FAMILISM - SABOGAL SCALE

Now I am going to read you some statements about parents and children. After I read each statement, please tell me if you very much disagree, disagree, are not sure, agree or very much agree with the statement.

[SHOW CARD]

	Very Much Dis-agree	Dis- agree	Not Sure	Agree	Very Much Agree	DK	RF
1. When one has problems, one can count on the help of relatives	1	2	3	4	5	98	99
2. The family should consult close relatives (uncles, aunts) concerning its important decisions	1	2	3	4	5	98	99
3. A person should share his/her home with uncles, aunts or first cousins if they are in need	1	2	3	4	5	98	99
4. Children should live in their parents' house until they get married	1	2	3	4	5	98	99
5. I would help within my means if a relative told me that she/he is in financial difficulty	1	2	3	4	5	98	99
6. One should be embarrassed about the bad things done by his/her brothers or sisters	1	2	3	4	5	98	99
7. When someone has problems s/he can count on help from his/her relatives	1	2	3	4	5	98	99
8. One of the most important goals in life is to have children	1	2	3	4	5	98	99

	Very Much Dis-agree	Dis- agree	Not Sure	Agree	Very Much Agree	DK	RF
9. One should have the hope of living long enough to see his/her grandchildren grow up	1	2	3	4	5	98	99
10. One should help economically with the support of younger brothers and sisters	1	2	3	4	5	98	99
11. Aging parents should live with their relatives	1	2	3	4	5	98	99
12. Much of what a son or daughter does should be done to please the parents	1	2	3	4	5	98	99
13. One can count on help from his/her relatives to solve most problems	1	2	3	4	5	98	99
14. One should make great sacrifices in order to guarantee a good education for his/her children	1	2	3	4	5	98	99

**Q. FATALISM**

Now, I am going to make some statements about how people feel about life. After I read each statement, please decide whether it is true as applied to you or false as applied to you. Not every statement is completely true or completely false for everyone, but if it is mostly true or mostly false for you, please tell me. Remember to give your own opinion.

Q1 It is more important to enjoy life now than to plan for the future.

- ☐ 1 True/mostly true
- ☐ 2 False/mostly false
- ☐ 98 don't know
- ☐ 99 refused

Q2 People die when it is their time and there is not much that can be done about it.

- ☐ 1 True/mostly true
- ☐ 2 False/mostly false
- ☐ 98 don't know
- ☐ 99 refused

Q3 We must live for the present, who knows what the future may bring.

- ☐ 1 True/mostly true
- ☐ 2 False/mostly false
- ☐ 98 don't know
- ☐ 99 refused

Q4 If my doctor said I was disabled, I would believe it even if I disagreed.

- ☐ 1 True/mostly true
- ☐ 2 False/mostly false
- ☐ 98 don't know
- ☐ 99 refused

Q5 It is not always wise to plan too far ahead because many things turn out to be a matter of good and bad fortune anyway.

- ☐ 1 True/mostly true
- ☐ 2 False/mostly false
- ☐ 98 don't know
- ☐ 99 refused

Q6 It doesn't do any good to try to change the future because the future is in the hands of God.

- ☐ 1 True/mostly true
- ☐ 2 False/mostly false
- ☐ 98 don't know
- ☐ 99 refused

Q7 When I make plans, I am almost certain I can make them work.

- ☐ 1 True/mostly true
- ☐ 2 False/mostly false
- ☐ 98 don't know
- ☐ 99 refused

Q8 I sometimes feel that someone controls me.

- ☐ 1 True/mostly true
- ☐ 2 False/mostly false
- ☐ 98 don't know
- ☐ 99 refused

## R. INCOME AND INSURANCE

Finally, I'd like to ask you a few questions about your income and insurance.

R1 How much difficulty do you have in meeting monthly payments on your bills -- a great deal, some, a little, or none? **USE SHOW CARD**

- ☐ 1 A great deal
- ☐ 2 Some
- ☐ 3 A little
- ☐ 4 None
- ☐ 98 DK
- ☐ 99 RF

R2 At the end of the month, do you usually end up with some money left over, just enough to make ends meet, or not enough to make ends meet? **USE SHOW CARD**

- ☐ 1 Some money left over
- ☐ 2 Just enough to make ends meet
- ☐ 3 Not enough money to make ends meet
- ☐ 98 DK
- ☐ 99 RF

R3 **(SHOW RESPONDENT CARD)** Please look at this card and tell me about how much was your yearly HOUSEHOLD income for the past year? Household income includes income from all individuals living in the household at the present time. Include income from all sources, such as wages, salaries, Social Security, retirement benefits, help from relatives, rent from property and so forth.

- ☐ 01 less than \$1000
- ☐ 02 1,000-4,999
- ☐ 03 5,000-9,999
- ☐ 04 10,000-14,999
- ☐ 05 15,000-19,999
- ☐ 06 20,000-24,999
- ☐ 07 25,000-29,999
- ☐ 08 30,000-34,999
- ☐ 09 35,000-39,999
- ☐ 10 40,000-49,999
- ☐ 11 50,000 and over
- ☐ 98 DK
- ☐ 99 RF

R4 Are you covered by Medicare?

\_\_\_ 1 yes ⇨ **ASK Q.R5**

\_\_\_ 2 no

\_\_\_ 98 DK

\_\_\_ 99 RF

**GO TO Q.R7**

R5 Do you have Part A of Medicare that covers hospital bills, Part B that covers doctors bills, or both?

\_\_\_ 1 Part A only

\_\_\_ 2 Part B only

\_\_\_ 3 Both Parts

\_\_\_ 98 DK

\_\_\_ 99 RF

R6 Could I please see your Medicare card?

\_\_\_ 1 yes (**RECORD NUMBER**) \_\_\_\_\_

\_\_\_ 2 no, don't have access to it

\_\_\_ 98 DK

\_\_\_ 99 no, refused

R7 Are you covered by Medicaid or any other public program such as welfare that pays all or part of your medical care?

\_\_\_ 1 yes

\_\_\_ 2 no

\_\_\_ 98 DK

\_\_\_ 99 RF

R8 Are you covered by any other health insurance plan (other than Medicare or Medicaid) such as Blue Cross/BlueShield, an HMO, or CHAMPUS?

\_\_\_ 1 yes

\_\_\_ 2 no

\_\_\_ 98 DK

\_\_\_ 99 RF

R9 For our confidential records, may we please have your social security number?

\_\_\_ 1 yes (RECORD NUMBER) \_\_\_ - \_\_\_ - \_\_\_ - \_\_\_ - \_\_\_

\_\_\_ 2 no, does not know number

\_\_\_ 3 no, does not have Social Security Card/number

\_\_\_ 98 DK

\_\_\_ 99 no, refused

**[End of interview - Thank respondent and record end time]**

Record end time: \_\_\_\_\_ : \_\_\_\_\_ am  
pm

## S. INTERVIEWER OBSERVATIONS

S1 Final status of respondent interview?

- ☐ 1 Complete
- ☐ 2 Incomplete, interviewer broke off
- ☐ 3 Incomplete, respondent broke off
- ☐ 4 Incomplete, other (SPECIFY) \_\_\_\_\_
- ☐ 5 Not applicable

S2 Was someone else present during the interview?

☐ 1 yes ⇒ **ASK S3**

<input type="checkbox"/> 2 no	}	<b>Go to S5</b>
<input type="checkbox"/> 98 DK		

S3 What was this person's relationship to the respondent?

- ☐ 1 spouse or partner
- ☐ 2 son
- ☐ 3 daughter
- ☐ 4 son-in-law
- ☐ 5 daughter-in-law
- ☐ 6 grandchild
- ☐ 7 parent
- ☐ 8 brother
- ☐ 9 sister
- ☐ 10 nephew
- ☐ 11 niece
- ☐ 12 cousin
- ☐ 13 aunt
- ☐ 14 uncle
- ☐ 15 great grandchild
- ☐ 16 sister-in-law
- ☐ 17 brother-in-law
- ☐ 18 other relative (Specify) \_\_\_\_\_
- ☐ 19 friend
- ☐ 20 boarder or roomer
- ☐ 21 paid employee
- ☐ 22 all other (Specify) \_\_\_\_\_
- ☐ 98 DK
- ☐ 99 RF

- S4 About what percentage of all responses to the questionnaire were provided by this other person rather than the respondent?

/\_\_\_/\_\_\_/\_\_\_/ percent

\_\_\_98 DK

- S5 Type of dwelling (CHOOSE ONE)

\_\_\_1 Detached single-family house  
\_\_\_2 Apartment (including duplexes)  
\_\_\_3 Trailer, mobile home  
\_\_\_4 Row house or townhouse, condominium  
\_\_\_98 DK

- S6 Was this a retirement community or housing restricted solely for older adults?

\_\_\_1 yes  
\_\_\_2 no  
\_\_\_98 DK

## APPENDIX 3

### Listing and Interviewing Results

Table 1: Summary of occupied, listed and vacant housing units, and coverage rates for each replicate and overall sample

	Rep <sup>1</sup> 1	Rep 2	Rep 3	Overall
A) # census units <sup>2</sup>	6619	3028	3385	13032
B) # housing units listed	6454	2790	3246	12490
C) # vacant/demolished	502	223	240	965
D) # listed occupied units (B - C)	5952	2567	3006	11525
E) Coverage rate (CR) <u># listed occupied units</u> # census occupied units	89.9%	84.8%	88.9%	88.4%

1 Rep refers to replicate in sampling design

2= Total number of units identified by 1990 Census

Table 2. Number of listed units w/completed interviews, number of eligible and ineligible subjects and, number of eligible subjects refused, and screening, interview, and response rates

	Rep 1	Rep 2	Rep 3	Overall
A) # units w/completed interviews	226	96	129	451
B) # units screened w/eligible (# complete + CB + RE) <sup>1</sup>	274	121	154	549
C) # units screened w/ineligible (#SO +SM +SA) <sup>2</sup>	5291	2379	2821	10491
D) No contact (NA +NE) <sup>3</sup>	384	61	27	472
E) Refused screening (RS)	3	6	4	13
F) Total units screened <sup>4</sup>	6454	2790	3246	12490
G) Screen rate (SR) $\frac{[B + C]}{\text{\# listed occupied units}}$	93.5%	97.4%	99.0%	95.8%
H) Interview Rate (IR) $\frac{[A]}{B}$	82.8%	79.3%	83.8%	82.1%
I) Response rate (RR) SR x IR/100	77.4%	77.2%	83.0%	78.7%

1 CB=total number of callbacks; RE=total number of eligible who refused to be interviewed

2 SO=Screen out, no females in household; SM=no Mexican-American females in household; SA=Mexican-American females not 50-74 years of age

3 NA=unit accessible, no contact; NE=no access to housing unit

4 Total number of units screened = (# vacant + # units screened w/eligible + # units screened ineligible + # no contact + # refused screen)

Table 3. Expected vs. actual yield for completed segments

	Rep 1	Rep 2	Rep 3	Overall
A) Expected yield <sup>1</sup>	314.2	128.93	150.77	594
B) Actual yield <sup>2</sup>	274	121	154	549
C) Expected vs actual yield A/B	87.2%	93.8%	102.1%	92.4%

1 Expected yield = # expected completed interviews based on census block estimates for number of eligible Mexican-American women, 50-74 years of age

2 Actual yield = (# units w/completed interviews + RE + CB) - # completed = total number of completed interviews; CB = total number of callbacks; RE = total number of eligible who refused to be interviewed

## Screening, Interview & Coverage Rates for Mammography Study

### Rep 1:

# Census housing units  $\Rightarrow$  6619

# Listed units  $\Rightarrow$  6454

# vacant/demolished/summer  $\Rightarrow$  502

---

# Listed occupied units (# listed units - # vacant/demolished)  $\Rightarrow$  6454 - 502 = 5952

$\text{Coverage rate} = \frac{\# \text{ listed occupied units}}{\# \text{ census occupied units}} = \frac{5952}{6619} = 89.9\%$
---

# screened units w/completed interviews  $\Rightarrow$  226

# CB (callbacks)<sup>1</sup>  $\Rightarrow$  7

# RE (eligible subjects who refused an interview)  $\Rightarrow$  41

---

Screened units w/eligible subjects (comp + CB + RE) = 274

# SO (Screen out, no females in household)  $\Rightarrow$  615

# SM (Screen out, no Mexican-American females in household)  $\Rightarrow$  3781

# SA (Screen out, Mexican-American females not 50-74 years of age)  $\Rightarrow$  895

---

Screened units w/ineligible subjects (SO + SM + SA) = 5291

$\text{Screen rate (SR)} = \frac{\# \text{ screened eligible} + \# \text{ units screened ineligible}}{\# \text{ occupied units}} = \frac{5565}{5952} = 93.5\%$
--

$\text{Interview rate (IR)} = \frac{\# \text{ units w/completed interviews}}{\# \text{ screened eligible}} = \frac{226}{274} = 82.8\%$
--

$\text{Response Rate} = \text{SR} \times \text{IR} / 100 = 93.5 \times 82.8 / 100 = 77.4\%$
---

# NA (Occupied & accessible unit, no contact)  $\Rightarrow$  303

# NE (Occupied, unaccessible unit, no contact)  $\Rightarrow$  81

---

# No contact (NA + NE) = 384

RS (Refused to be screened)  $\Rightarrow$  3

Total screened units: Vacant/demolished 502

Eligible 274

Ineligible 5291

No contact 384

Refused screen 3

---

Total 6454 = # units listed

**Rep 2:**

# Census housing units  $\Rightarrow$  3028  
# Listed units  $\Rightarrow$  2790  
# vacant/demolished/summer  $\Rightarrow$  223

---

**# Listed occupied units (# listed units - # vacant/demolished)  $\Rightarrow$  2790 - 223 = 2567**

$\text{Coverage rate} = \frac{\text{\# listed occupied units}}{\text{\# census occupied units}} = \frac{2567}{3028} = 84.8\%$
---

# screened units w/completed interviews  $\Rightarrow$  96  
# CB (callbacks)<sup>1</sup>  $\Rightarrow$  5  
# RE (eligible subjects who refused an interview)  $\Rightarrow$  20

---

**Screened units w/eligible subjects (comp + CB + RE) = 121**

# SO (Screen out, no females in household)  $\Rightarrow$  268  
# SM (Screen out, no Mexican-American females in household)  $\Rightarrow$  1686  
# SA (Screen out, Mexican-American females not 50-74 years of age)  $\Rightarrow$  425

---

**Screened units w/ineligible subjects (SO + SM + SA) = 2379**

$\text{Screen rate (SR)} = \frac{\text{\# screened eligible} + \text{\# units screened}}{\text{\# occupied units}} = \frac{2500}{2567} = 97.4\%$
--

$\text{Interview rate (IR)} = \frac{\text{\# completed}}{\text{\# screened eligible}} = \frac{96}{121} = 79.3\%$
--

$\text{Response Rate} = \text{SR} \times \text{IR} / 100 = 97.4 \times 79.3 / 100 = 77.2\%$
---

# NA (Occupied & accessible unit, no contact) = 46  
# NE (Occupied, unaccessible unit, no contact) = 15

---

**# No contact (NA+ NE) = 61**

**RS (Refused to be screened)  $\Rightarrow$  6**

Total screened units:	Vacant/demolished	223
	Eligible	121
	Ineligible	2379
	No contact	61
	Refused screen	6
	<b>Total</b>	<b>2790 = # units listed</b>

**Rep 3:**

# Census housing units  $\Rightarrow$  3385

# Listed units  $\Rightarrow$  3246

# vacant/demolished/summer  $\Rightarrow$  240

---

**# Listed occupied units (# listed units - # vacant/demolished)  $\Rightarrow$  3246 - 240 = 3006**

$\text{Coverage rate} = \frac{\text{\# listed occupied units}}{\text{\# census occupied units}} = \frac{3006}{3385} = 88.9\%$
---

# Screened units w/completed interviews  $\Rightarrow$  129

# CB (callbacks)  $\Rightarrow$  10

# RE (eligible subjects who refused an interview)  $\Rightarrow$  15

---

**Screened units w/eligible subjects (comp + CB + RE) = 154**

# SO (Screen out, no females in household)  $\Rightarrow$  263

# SM (Screen out, no Mexican-American females in household)  $\Rightarrow$  2046

# SA (Screen out, Mexican-American females not 50-74 years of age)  $\Rightarrow$  512

---

**Screened units w/ineligible subjects (SO + SM + SA) = 2821**

$\text{Screen rate (SR)} = \frac{\text{\# screened eligible} + \text{\# units screened}}{\text{\# occupied units}} = \frac{2975}{3006} = 99.0\%$
--

$\text{Interview rate (IR)} = \frac{\text{\# completed}}{\text{\# screened eligible}} = \frac{129}{154} = 83.8\%$
---

$\text{Response Rate} = \text{SR} \times \text{IR} / 100 = 99.0 \times 83.8 / 100 = 83.0\%$
---

# NA (Occupied & accessible unit, no contact)  $\Rightarrow$  21

# NE (Occupied, unaccessible unit, no contact)  $\Rightarrow$  6

---

**# No contact (NA+ NE) = 27**

**RS (Refused to be screened)  $\Rightarrow$  4**

Total screened units:	Vacant/demolished	240
	Eligible	154
	Ineligible	2821
	No contact	27
	Refused screen	4
	<b>Total</b>	<b>3246 = # units listed</b>

**Overall response rate:**

# Census housing units ⇔ 13032

# Listed units ⇔ 12490

# vacant/demolished/summer ⇔ 965

---

**# Listed occupied units (# listed units - # vacant/demolished) ⇔ 3246 - 240 = 11525**

$\text{Coverage rate} = \frac{\text{\# listed occupied units}}{\text{\# census occupied units}} = \frac{11525}{13032} = 88.4\%$
---

# screened units w/completed interviews ⇔ 451

# CB (callbacks)<sup>1</sup> ⇔ 22

# RE (eligible subjects who refused an interview) ⇔ 76

---

**Screened units w/eligible subjects (comp + CB + RE) = 549**

# SO ⇔ Screen out, no females in household = 1146

# SM ⇔ Screen out, no Mexican-American females in household = 7513

# SA ⇔ Screen out, Mexican-American females not 50-74 years of age = 1832

---

**Screened units w/ineligible subjects (SO + SM + SA) ⇔ 10491**

$\text{Screen rate (SR)} = \frac{\text{\# screened eligible} + \text{\# units screened}}{\text{\# occupied units}} = \frac{11040}{11525} = 95.8\%$
--

$\text{Interview rate (IR)} = \frac{\text{\# completed}}{\text{\# screened eligible}} = \frac{451}{549} = 82.1\%$
---

$\text{Response Rate} = \text{SR} \times \text{IR}/100 = 95.8 \times 82.2/100 = 78.7\%$
---

# NA (occupied & accessible unit, no contact) = 370

# NE (Occupied, unaccessible unit, no contact) = 102

---

**# No contact (NA+ NE) ⇔ 472**

**RS (Refused to be screened) ⇔ 13**

Total screened units:	Vacant/demolished	965
	Eligible	549
	Ineligible	10491
	No contact	472
	Refused screen	13
	<b>Total</b>	<b>12490 = # units listed</b>

### Expected vs actual yield

$$\text{Yield} = \frac{\text{Actual comp} + \text{RE} + \text{CB}}{\text{Expected yield}}$$

$$\text{Rep 1} = \frac{274}{314.2} = 87.2\%$$

$$\text{Rep 2} = \frac{121}{128.93} = 93.8\%$$

$$\text{Rep 3} = \frac{154}{150.77} = 102.1\%$$

$$\text{Total yield} = \frac{549}{594} = 92.4\%$$

## APPENDIX 4

### Tables Containing Study Findings

**Hypothesis1:**

**Selected predictors of mammographic screening behavior in predominantly no-Hispanic populations will generalize to Mexican-Americans. These include education, marital status and barriers to access, in addition to beliefs, knowledge and attitudes about breast cancer.**

**a. It increases with Educational attainment**

GRADE      Ever had a Mammogram				GRADE      Had a Mammogram in past 2Yrs			
Frequency Row Pct	Yes	No	Total	Frequency Row Pct	Yes	No	Total
1-5	120 74.07	42 25.93	162	1-5	80 49.69	81 50.31	161
6-8	89 80.91	21 19.09	110	6-8	55 50.00	55 50.00	110
9-11	58 86.57	9 13.43	67	9-11	44 65.67	23 34.33	67
12 or more	96 84.96	17 15.04	113	12 or more	76 67.26	37 32.74	113
Total	363	89	452	Total	255	196	451
STATISTICS FOR TABLE OF GRADE BY Ever had a mammogram.				STATISTICS FOR TABLE OF GRADE BY Had a mammogram in past 2Yrs.			
Statistic	DF	Value	Prob	Statistic	DF	Value	Prob
Chi-Square	3	7.210	0.06	Chi-Square	3	12.545	0.006
Likelihood Ratio Chi-Square	3	7.205	0.066	Likelihood Ratio Chi-Square	3	12.701	0.005
Mantel-Haenszel Chi-Square	1	6.481	0.011	Mantel-Haenszel Chi-Square	1	9.989	0.002
Phi Coefficient		0.126		Phi Coefficient		0.167	
Contingency Coefficient		0.125		Contingency Coefficient		0.165	
Cramer's V		0.126		Cramer's V		0.167	
Sample Size = 452				Sample Size = 451 Frequency missing = 1			

The Mantel-Haenszel chi square statistics show an association between the highest grade achieved and ever had a mammogram. (p=0.011)

The likelihood of having mammogram in past 2yrs increases with educational attainment. (p=0.002)

**b. It increases with Income**

INCOME      Ever had a mammogram				INCOME      Had a mammogram in past 2Yrs.			
Frequency Row Pct	Yes	No	Total	Frequency Row Pct	Yes	No	Total
\$1-9999	107 71.81	42 28.19	149	\$1-9999	66 44.30	83 55.70	149
10K-24999	155 82.01	34 17.99	189	10K-24999	112 59.57	76 40.43	188
25K-49999	73 87.95	10 12.05	83	25K-49999	56 67.47	27 32.53	83
50K & over	28 90.32	3 9.68	31	50K & over	21 67.74	10 32.26	31
Total	363	89	452	Total	255	196	451
STATISTICS FOR TABLE OF INCOME By Ever had a mammogram				STATISTICS FOR TABLE OF INCOME BY Had a mammogram in past 2Yrs.			
Statistic	DF	Value	Prob	Statistic	DF	Value	Prob
Chi-Square	3	12.181	0.007	Chi-Square	3	15.414	0.001
Likelihood Ratio Chi-Square	3	12.322	0.006	Likelihood Ratio Chi-Square	3	15.479	0.001
Mantel-Haenszel Chi-Square	1	9.048	0.003	Mantel-Haenszel Chi-Square	1	10.113	0.001
Phi Coefficient		0.164		Phi Coefficient		0.185	
Contingency Coefficient		0.162		Contingency Coefficient		0.182	
Cramer's V		0.164		Cramer's V		0.185	
Sample Size = 452				Effective Sample Size = 451 Frequency Missing = 1			

The Mantel-Haenszel chi-square statistics indicate that ever having a mammogram and having a mammogram increases with income ( $p=0.003$  and  $p=0.001$ ).

c. It is higher with being married.

Marital status      Ever had a mammogram				Marital status      Had a mammogram in past 2Yrs.			
Frequency	Yes	No	Total	Frequency	Yes	No	Total
Row Pct				Row Pct			
Married	235 81.88	52 18.12	287	Married	166 58.04	120 41.96	286
Widowed	63 74.12	22 25.88	85	Widowed	46 54.12	39 45.88	85
Divorced	40 83.33	8 16.67	48	Divorced	24 50.00	24 50.00	48
Separated	20 80.00	5 20.00	25	Separated	14 56.00	11 44.00	25
Never Married	5 71.43	2 28.57	7	Never Married	5 71.43	2 28.57	7
Total	363	89	452	Total	255	196	451
STATISTICS FOR TABLE OF Marital status BY Ever had a mammogram				STATISTICS FOR TABLE OF Marital status By Had a mammogram in past 2Yrs.			
Statistic	DF	Value	Prob	Statistic	DF	Value	Prob
Chi-Square	4	3.138	0.535	Chi-Square	4	1.936	0.748
Likelihood Ratio Chi-Square	4	2.987	0.560	Likelihood Ratio Chi-Square	4	1.957	0.744
Mantel-Haenszel Chi-Square	1	0.374	0.541	Mantel-Haenszel Chi-Square	1	0.195	0.658
Phi Coefficient		0.083		Phi Coefficient		0.066	
Contingency Coefficient		0.083		Contingency Coefficient		0.065	
Cramer's V		0.083		Cramer's V		0.066	
Sample Size = 452				Effective Sample Size = 451 Frequency Missing = 1			

There is no association between being married and mammographic use.

d. It is higher with having **insurance** coverage.

INSURANCE      EVER HAD A MAMMOGRAM				INSUR      MAM_2YRS			
Frequency Row Pct	1	2	Total	Frequency Row Pct	1	2	Total
None	157 75.85	50 24.15	207	None	100 48.31	107 51.69	207
Medicare/ Medicaid	35 72.92	13 27.08	48	Medicare/ Medicaid	25 52.08	23 47.92	48
Private	169 86.67	26 13.33	195	Private	130 66.67	65 33.33	195
Total	361	89	450	Total	255	195	450
Frequency Missing = 2				Frequency Missing = 2			
STATISTICS FOR TABLE OF Insurance BY Ever had a mammogram				STATISTICS FOR TABLE OF Insurance BY Had a mammogram in past 2Yrs.			
Statistic	DF	Value	Prob	Statistic	DF	Value	Prob
Chi-Square	2	9.218	0.010	Chi-Square	2	14.240	0.001
Likelihood Ratio Chi-Square	2	9.478	0.009	Likelihood Ratio Chi-Square	2	14.383	0.001
Mantel-Haenszel Chi-Square	1	7.323	0.007	Mantel-Haenszel Chi-Square	1	13.699	0.001
Phi Coefficient		0.143		Phi Coefficient		0.178	
Contingency Coefficient		0.142		Contingency Coefficient		0.175	
Cramer's V		0.143		Cramer's V		0.178	
Effective Sample Size = 450				Effective Sample Size = 450			
Frequency Missing = 2				Frequency Missing = 2			

The Chi – square statistics shows that there is an association between having insurance coverage and ever had a mammogram or had a mammogram in the past 2yrs ( $p=.01$  &  $p=0.001$ )

The percentage of women who are covered by private Insurance are more likely to have ever had a mammogram or to have had one in the past 2yrs.

e. It increases with having usual source of care

Usual Source of Care				Usual Source of Care			
Ever had a mammogram				Had a mammogram in past 2Yrs.			
Frequency				Frequency			
Row Pct	Yes	No	Total	Row Pct	Yes	No	Total
Yes	343 83.25	69 16.75	412	Yes	245 59.61	166 40.39	411
No	20 50.00	20 50.00	40	No	10 25.00	30 75.00	40
Total	363	89	452	Total	255	196	451
STATISTICS FOR TABLE OF Usual Source of care BY Ever had a mammogram				STATISTICS FOR TABLE OF Usual Source of care BY Had a mammogram in past 2Yrs.			
Statistic	DF	Value	Prob	Statistic	DF	Value	Prob
Chi-Square	1	25.494	0.001	Chi-Square	1	17.771	0.001
Likelihood Ratio Chi-Square	1	20.670	0.001	Likelihood Ratio Chi-Square	1	18.004	0.001
Continuity Adj. Chi-Square	1	23.435	0.001	Continuity Adj. Chi-Square	1	16.390	0.001
Mantel-Haenszel Chi-Square	1	25.438	0.001	Mantel-Haenszel Chi-Square	1	17.731	0.001
Fisher's Exact Test (Left)			1.000	Fisher's Exact Test (Left)			1.000
(Right)		5.58E-06		(Right)		2.38E-05	
(2-tail)		5.58E-06		(2-Tail)		3.65E-05	
Phi Coefficient		0.237		Phi Coefficient		0.199	
Contingency Coefficient		0.231		Contingency Coefficient		0.195	
Cramer's V		0.237		Cramer's V		0.199	
Sample Size = 452				Effective Sample Size = 451 Frequency Missing = 1			

The Chi - Square statistics show that there is an association of ever had a mammogram or had mammogram in past 2yrs with having a usual source of care. (  $p=0.001$  )

f. Increases with greater knowledge of risks and symptoms of breast cancer.

f1. Question asked: What is the age doctors recommend a woman to start having mammograms?

- ( Scale: 1. Age between 40 –50,  
2. Age <40 or Age >50 or if at age when she starts or stops having period  
3. Controversial –doctors do not agree)

AGE(Age) MAM_EVER				AGE(Age) MAM_2YRS			
Frequency			Total	Frequency			Total
Row Pct	1	2		Row Pct	1	2	
1	158 84.04	30 15.96	188	1	114 60.64	74 39.36	188
2	193 85.40	33 14.60	226	2	131 58.22	94 41.78	225
3	7 70.00	3 30.00	10	3	6 60.00	4 40.00	10
Total	358	66	424	Total	251	172	423
Frequency Missing = 28				Frequency Missing = 29			
STATISTICS FOR TABLE OF AGE BY MAM_EVER				STATISTICS FOR TABLE OF AGE BY MAM_2YRS			
Statistic	DF	Value	Prob	Statistic	DF	Value	Prob
Chi-Square	2	1.767	0.413	Chi-Square	2	0.250	0.883
Likelihood Ratio Chi-Square	2	1.496	0.473	Likelihood Ratio Chi-Square	2	0.250	0.883
Mantel-Haenszel Chi-Square	1	0.031	0.861	Mantel-Haenszel Chi-Square	1	0.190	0.663
Phi Coefficient		0.065		Phi Coefficient		0.024	
Contingency Coefficient		0.064		Contingency Coefficient		0.024	
Cramer's V		0.065		Cramer's V		0.024	
Effective Sample Size = 424				Effective Sample Size = 423			
Frequency Missing = 28				Frequency Missing = 29			

The Mantel-Haenszel chi – square statistics show that there is no significant association between cancer knowledge/ awareness to ever had a mammogram or had a mammogram in the past 2yrs.

f2. Question asked: How often do you think a woman of your age should have a mammogram?

AGEG2      MAM_EVER				AGEG2      MAM_2YRS			
Frequency Row Pct	1	2	Total	Frequency Row Pct	1	2	Total
yearly	290 83.57	57 16.43	347	yearly	209 60.40	137 39.60	346
every 2 years	36 85.71	6 14.29	42	every 2 years	18 42.86	24 57.14	42
other	26 70.27	11 29.73	37	other	22 59.46	15 40.54	37
Total	352	74	426	Total	249	176	425
Frequency Missing = 26				Frequency Missing = 27			
STATISTICS FOR TABLE OF AGE2 BY MAM_EVER				STATISTICS FOR TABLE OF AGE2 BY MAM_2YRS			
Statistic	DF	Value	Prob	Statistic	DF	Value	Prob
Chi-Square	2	4.431	0.109	Chi-Square	2	4.766	0.092
Likelihood Ratio Chi-Square	2	3.909	0.142	Likelihood Ratio Chi-Square	2	4.684	0.096
Mantel-Haenszel Chi-Square	1	2.704	0.100	Mantel-Haenszel Chi-Square	1	0.923	0.337
Phi Coefficient		0.102		Phi Coefficient		0.106	
Contingency Coefficient		0.101		Contingency Coefficient		0.105	
Cramer's V		0.102		Cramer's V		0.106	
Effective Sample Size = 426				Effective Sample Size = 425			
Frequency Missing = 26				Frequency Missing = 27			

The Mantel-Haenszel chi – square statistics show that there is no significant association between cancer knowledge/ awareness to ever had a mammogram or had a mammogram in the past 2yrs.

**g. Increases with positive attitudes about preventive care.**

1. Question asked: When was the last time you visited a doctor for routine check-up?

Time MAM_EVER				Time MAM_2YRS			
Frequency	1	2	Total	Frequency	1	2	Total
Row Pct				Row Pct			
< 1year	162 88.52	21 11.48	183	1	128 69.95	55 30.05	183
<2 year	41 82.00	9 18.00	50	2	31 62.00	19 38.00	50
2 Or more years	36 65.45	19 34.55	55	3	10 18.18	45 81.82	55
Total	239	49	288	Total	169	119	288
Frequency Missing = 164				Frequency Missing = 164			
STATISTICS FOR TABLE OF Time BY MAM_EVER				STATISTICS FOR TABLE OF Time BY MAM_2YRS			
Statistic	DF	Value	Prob	Statistic	DF	Value	Prob
Chi-Square	2	15.983	0.001	Chi-Square	2	47.009	0.001
Likelihood Ratio Chi-Square	2	14.253	0.001	Likelihood Ratio Chi-Square	2	48.221	0.001
Mantel-Haenszel Chi-Square	1	15.244	0.001	Mantel-Haenszel Chi-Square	1	41.743	0.001
Phi Coefficient		0.236		Phi Coefficient		0.404	
Contingency Coefficient		0.229		Contingency Coefficient		0.375	
Cramer's V		0.236		Cramer's V		0.404	
Effective Sample Size = 288				Effective Sample Size = 288			
Frequency Missing = 164				Frequency Missing = 164			
WARNING: 36% of the data are missing.				WARNING: 36% of the data are missing.			

The Mantel-Haenszel chi-square statistics show there may be an association with ever had a mammogram or had mammogram in the past 2yrs and a positive attitudes about preventive care. (p=0.001 and p= 0.001). (36% of the data are missing)

## 2. Question asked :Do you examine breasts for lumps?

E22(E22)      MAM_EVER				E22(E22)      MAM_2YRS			
Frequency Row Pct	1	2	Total	Frequency Row Pct	1	2	Total
Yes	295 81.49	67 18.51	362	Yes	207 57.34	154 42.66	361
No	68 75.56	22 24.44	90	No	48 53.33	42 46.67	90
Total	363	89	452	Total	255	196	451
STATISTICS FOR TABLE OF E22 BY MAM_EVER				STATISTICS FOR TABLE OF E22 BY MAM_2YRS			
Statistic	DF	Value	Prob	Statistic	DF	Value	Prob
Chi-Square	1	1.606	0.205	Chi-Square	1	0.471	0.493
Likelihood Ratio Chi-Square	1	1.542	0.214	Likelihood Ratio Chi-Square	1	0.469	0.493
Continuity Adj. Chi-Square	1	1.253	0.263	Continuity Adj. Chi-Square	1	0.322	0.570
Mantel-Haenszel Chi-Square	1	1.603	0.206	Mantel-Haenszel Chi-Square	1	0.470	0.493
Phi Coefficient		0.060		Phi Coefficient		0.032	
Contingency Coefficient		0.060		Contingency Coefficient		0.032	
Cramer's V		0.060		Cramer's V		0.032	
Sample Size = 452				Effective Sample Size = 451 Frequency Missing = 1			

The chi – square statistic shows that there is no association with ever had a mammogram or had a mammogram in the past 2yrs and the positive attitudes about preventive care. (examine breast for lumps) ( $p=0.205$  &  $p=0.493$ ).

- i. Higher for women with a **perceived susceptibility to breast cancer**.  
 1. Question asked: How much do you worry about getting breast cancer?

G6(G6) MAM_EVER				G6(G6) MAM_2YRS			
Frequency Row Pct	1	2	Total	Frequency Row Pct	1	2	Total
a lot	76 95.00	4 5.00	80	a lot	56 70.00	24 30.00	80
some	123 83.11	25 16.89	148	some	82 55.78	65 44.22	147
not at all	164 73.21	60 26.79	224	not at all	117 52.23	107 47.77	224
Total	363	89	452	Total	255	196	451
STATISTICS FOR TABLE OF G6 BY MAM_EVER				STATISTICS FOR TABLE OF G6 BY MAM_2YRS			
Statistic	DF	Value	Prob	Statistic	DF	Value	Prob
Chi-Square	2	18.782	0.001	Chi-Square	2	7.624	0.022
Likelihood Ratio Chi-Square	2	21.919	0.001	Likelihood Ratio Chi-Square	2	7.842	0.020
Mantel-Haenszel Chi-Square	1	18.683	0.001	Mantel-Haenszel Chi-Square	1	6.562	0.010
Phi Coefficient		0.204		Phi Coefficient		0.130	
Contingency Coefficient		0.200		Contingency Coefficient		0.129	
Cramer's V		0.204		Cramer's V		0.130	
Sample Size = 452				Effective Sample Size = 451 Frequency Missing = 1			

The Mantel-Haenszel chi-square statistics show there is an association between ever had a mammogram or had a mammogram in the past 2yrs to perceived susceptibility to breast cancer. ( $p=0.001$  &  $p=0.010$ ).

2. Question asked: Do you worry about any of your female relatives getting breast cancer?

G7 (G7) MAM_EVER				G7 (G7) MAM_2YRS			
Frequency	1	2	Total	Frequency	1	2	Total
Row Pct				Row Pct			
Yes	218 86.51	34 13.49	252	Yes	155 61.75	96 38.25	251
No	145 72.86	54 27.14	199	No	100 50.25	99 49.75	199
Total	363	88	451	Total	255	195	450
Frequency Missing = 1				Frequency Missing = 2			
STATISTICS FOR TABLE OF G7 BY MAM_EVER				STATISTICS FOR TABLE OF G7 BY MAM_2YRS			
Statistic	DF	Value	Prob	Statistic	DF	Value	Prob
Chi-Square	1	13.180	0.001	Chi-Square	1	5.980	0.014
Likelihood Ratio Chi-Square	1	13.124	0.001	Likelihood Ratio Chi-Square	1	5.980	0.014
Continuity Adj. Chi-Square	1	12.325	0.001	Continuity Adj. Chi-Square	1	5.521	0.019
Mantel-Haenszel Chi-Square	1	13.150	0.001	Mantel-Haenszel Chi-Square	1	5.967	0.015
Phi Coefficient		0.171		Phi Coefficient		0.115	
Contingency Coefficient		0.169		Contingency Coefficient		0.115	
Cramer's V		0.171		Cramer's V		0.115	
Effective Sample Size = 451				Effective Sample Size = 450			
Frequency Missing = 1				Frequency Missing = 2			

The chi-square statistics show there is an association between ever had a mammogram or had a mammogram in the past 2yrs to perceived susceptibility to breast cancer. ( $p=0.001$  &  $p=0.014$ ).

3. Question asked: Are there any female members of your immediate family who have or had breast cancer? (By immediate family, I mean mother, sister, aunt, daughter or grandmother)

D4 (D4) MAM_EVER				D4 (D4) MAM_2YRS			
Frequency			Total	Frequency			Total
Row Pct	1	2		Row Pct	1	2	
Yes	82 87.23	12 12.77	94	Yes	63 67.02	31 32.98	94
No	280 78.43	77 21.57	357	No	191 53.65	165 46.35	356
Total	362	89	451	Total	254	196	450
Frequency Missing = 1				Frequency Missing = 2			
STATISTICS FOR TABLE OF D4 BY MAM_EVER				STATISTICS FOR TABLE OF D4 BY MAM_2YRS			
Statistic	DF	Value	Prob	Statistic	DF	Value	Prob
Chi-Square	1	3.640	0.056	Chi-Square	1	5.407	0.020
Likelihood Ratio Chi-Square	1	3.941	0.047	Likelihood Ratio Chi-Square	1	5.519	0.019
Continuity Adj. Chi-Square	1	3.105	0.078	Continuity Adj. Chi-Square	1	4.877	0.027
Mantel-Haenszel Chi-Square	1	3.632	0.057	Mantel-Haenszel Chi-Square	1	5.395	0.020
Phi Coefficient		0.090		Phi Coefficient		0.110	
Contingency Coefficient		0.089		Contingency Coefficient		0.109	
Cramer's V		0.090		Cramer's V		0.110	
Effective Sample Size = 451				Effective Sample Size = 450			
Frequency Missing = 1				Frequency Missing = 2			

The chi-square statistics show there is an association with ever had a mammogram or had mammogram in the past 2yrs and family history of breast cancer. (p=0.057 and p= 0.020).

4. Question asked: Other than female members of your immediate family, are there any other relatives or close friends who had breast cancer?

D6(D6) MAM_EVER				D6(D6) MAM_2YRS			
Frequency Row Pct	1	2	Total	Frequency Row Pct	1	2	Total
Yes	131 85.06	23 14.94	154	1	90 58.82	63 41.18	153
No	232 77.85	66 22.15	298	2	165 55.37	133 44.63	298
Total	363	89	452	Total	255	196	451
STATISTICS FOR TABLE OF D6 BY MAM_EVER				Frequency Missing = 1			
Statistic	DF	Value	Prob	STATISTICS FOR TABLE OF D6 BY MAM_2YRS			
Chi-Square	1	3.340	0.068	Statistic	DF	Value	Prob
Likelihood Ratio Chi-Square	1	3.461	0.063	Chi-Square	1	0.491	0.484
Continuity Adj. Chi-Square	1	2.900	0.089	Likelihood Ratio Chi-Square	1	0.492	0.483
Mantel-Haenszel Chi-Square	1	3.333	0.068	Continuity Adj. Chi-Square	1	0.360	0.548
Phi Coefficient		0.086		Mantel-Haenszel Chi-Square	1	0.490	0.484
Contingency Coefficient		0.086		Phi Coefficient		0.033	
Cramer's V		0.086		Contingency Coefficient		0.033	
Sample Size = 452				Cramer's V		0.033	
				Effective Sample Size = 451			
				Frequency Missing = 1			

The chi-square statistics show there is no association with ever had a mammogram or had mammogram in the past 2yrs and family history of breast cancer. (p=0.068 and p= 0.484).

j. Decreases with age.

MAM_EVER				MAM_2YRS			
AGEGROUP				AGEGROUP			
Frequency	1	2	Total	Frequency	1	2	Total
Row Pct				Row Pct			
50-64	256 80.76	61 19.24	317	50-64	185 58.54	131 41.46	316
65 -69	64 81.01	15 18.99	79	65 -69	42 53.16	37 46.84	79
70-74	43 76.79	13 23.21	56	70-74	28 50.00	28 50.00	56
Total	363	89	452	Total	255	196	451
STATISTICS FOR TABLE OF AGEGROUP BY MAM_EVER				STATISTICS FOR TABLE OF AGEGROUP BY MAM_2YRS			
Statistic	DF	Value	Prob	Statistic	DF	Value	Prob
Chi-Square	2	0.505	0.777	Chi-Square	2	1.858	0.395
Likelihood Ratio Chi-Square	2	0.487	0.784	Likelihood Ratio Chi-Square	2	1.849	0.397
Mantel-Haenszel Chi-Square	1	0.215	0.643	Mantel-Haenszel Chi-Square	1	1.835	0.176
Phi Coefficient		0.033		Phi Coefficient		0.064	
Contingency Coefficient		0.033		Contingency Coefficient		0.064	
Cramer's V		0.033		Cramer's V		0.064	
Sample Size = 452				Effective Sample Size = 451 Frequency Missing = 1			

The Mantel-Haenszel chi-square statistics show that there is no significant association between ever had a mammogram or had a mammogram in past 2yrs and age. ( $p=0.643$  &  $p=0.176$ ).

k. Increases with positive **beliefs about efficacy of screening** ( question asked: What are the person's chances of surviving breast cancer if it is found and treated early?)

Efficacy      MAM_EVER				Efficacy      MAM_2YRS			
Frequency Row Pct	1	2	Total	Frequency Row Pct	1	2	Total
good	293 81.62	66 18.38	359	Good	205 57.26	153 42.74	358
Fair	63 81.82	14 18.18	77	Fair	44 57.14	33 42.86	77
poor	5 55.56	4 44.44	9	Poor	4 44.44	5 55.56	9
Total	361	84	445	Total	253	191	444
Frequency Missing = 7				Frequency Missing = 8			
STATISTICS FOR TABLE OF EFFICACY BY MAM_EVER				STATISTICS FOR TABLE OF EFFICACY BY MAM_2YRS			
Statistic	DF	Value	Prob	Statistic	DF	Value	Prob
Chi-Square	2	3.923	0.141	Chi-Square	2	0.589	0.745
Likelihood Ratio Chi-Square	2	3.146	0.207	Likelihood Ratio Chi-Square	2	0.582	0.748
Mantel-Haenszel Chi-Square	1	1.163	0.281	Mantel-Haenszel Chi-Square	1	0.200	0.655
Phi Coefficient		0.094		Phi Coefficient		0.036	
Contingency Coefficient		0.093		Contingency Coefficient		0.036	
Cramer's V		0.094		Cramer's V		0.036	
Effective Sample Size = 445				Effective Sample Size = 444			
Frequency Missing = 7				Frequency Missing = 8			

The Mantel-Haenszel chi – square statistics show that there is no association with positive beliefs and ever had a mammogram or had a mammogram in the past two years. (  $p=0.281$  &  $p=0.655$ ).

**Hypothesis2. Women with low levels of acculturation are less likely to have had a mammogram than with high levels of acculturation.**

**a. Mammographic use increases with higher proficiency in English**

(Scale: 1 → (Low) --- 4 → (High))

ENGPRO MAM_EVER				ENGPRO MAM_2YRS			
Frequency Row Pct	1	2	Total	Frequency Row Pct	1	2	Total
1	52 67.53	25 32.47	77	1	34 44.16	43 55.84	77
2	73 84.88	13 15.12	86	2	43 50.59	42 49.41	85
3	108 85.71	18 14.29	126	3	77 61.11	49 38.89	126
4	130 79.75	33 20.25	163	4	101 61.96	62 38.04	163
Total	363	89	452	Total	255	196	451
STATISTICS FOR TABLE OF ENGPRO BY MAM_EVER				STATISTICS FOR TABLE OF ENGPRO BY MAM_2YRS			
Statistic	DF	Value	Prob	Statistic	DF	Value	Prob
Chi-Square	3	11.447	0.010	Chi-Square	3	9.054	0.029
Likelihood Ratio Chi-Square	3	10.747	0.013	Likelihood Ratio Chi-Square	3	9.022	0.029
Mantel-Haenszel Chi-Square	1	2.554	0.110	Mantel-Haenszel Chi-Square	1	8.127	0.004
Phi Coefficient		0.159		Phi Coefficient		0.142	
Contingency Coefficient		0.157		Contingency Coefficient		0.140	
Cramer's V		0.159		Cramer's V		0.142	
Sample Size = 452				Effective Sample Size = 451 Frequency Missing = 1			

The Mantel-Haenszel chi-square statistics show there is no association with ever had a mammogram and proficiency in English ( $p=0.110$ ) But there is an association with had a mammogram in the past 2yrs and proficiency in English. ( $p=0.004$ ).

b. Mammographic use increases with higher usage of English

USAGE      MAM_EVER				USAGE      MAM_2YRS			
Frequency Row Pct	1	2	Total	Frequency Row Pct	1	2	Total
1	102 75.56	33 24.44	135	1	68 50.75	66 49.25	134
2	58 84.06	11 15.94	69	2	36 52.17	33 47.83	69
3	138 84.15	26 15.85	164	3	99 60.37	65 39.63	164
4	60 81.08	14 18.92	74	4	48 64.86	26 35.14	74
Total	358	84	442	Total	251	190	441
Frequency Missing = 10				Frequency Missing = 11			
STATISTICS FOR TABLE OF USAGE BY MAM_EVER				STATISTICS FOR TABLE OF USAGE BY MAM_2YRS			
Statistic	DF	Value	Prob	Statistic	DF	Value	Prob
Chi-Square	3	4.074	0.254	Chi-Square	3	5.416	0.144
Likelihood Ratio Chi-Square	3	3.977	0.264	Likelihood Ratio Chi-Square	3	5.436	0.143
Mantel-Haenszel Chi-Square	1	1.975	0.160	Mantel-Haenszel Chi-Square	1	5.142	0.023
Phi Coefficient		0.096		Phi Coefficient		0.111	
Contingency Coefficient		0.096		Contingency Coefficient		0.110	
Cramer's V		0.096		Cramer's V		0.111	
Effective Sample Size = 442				Effective Sample Size = 441			
Frequency Missing = 10				Frequency Missing = 11			

The Mantel-Haenszel chi-square statistics show there is no association with ever had a mammogram and usage of English ( $p=0.160$ ) But there is an association with had a mammogram in the past 2yrs and usage of English. ( $p=0.023$ ).

c. Mammographic use increases with higher value placed on Mexican culture.

MEXCUL      MAM_EVER				MEXCUL      MAM_2YRS			
Frequency			Total	Frequency			Total
Row Pct	1	2		Row Pct	1	2	
1	146 78.92	39 21.08	185	1	98 53.26	86 46.74	184
2	113 84.96	20 15.04	133	2	84 63.16	49 36.84	133
3	53 80.30	13 19.70	66	3	36 54.55	30 45.45	66
4	27 75.00	9 25.00	36	4	23 63.89	13 36.11	36
Total	339	81	420	Total	241	178	419
Frequency Missing = 32				Frequency Missing = 33			
STATISTICS FOR TABLE OF MEXCUL BY MAM_EVER				STATISTICS FOR TABLE OF MEXCUL BY MAM_2YRS			
Statistic	DF	Value	Prob	Statistic	DF	Value	Prob
Chi-Square	3	2.687	0.442	Chi-Square	3	3.933	0.269
Likelihood Ratio Chi-Square	3	2.728	0.436	Likelihood Ratio Chi-Square	3	3.955	0.266
Mantel-Haenszel Chi-Square	1	0.019	0.891	Mantel-Haenszel Chi-Square	1	1.148	0.284
Phi Coefficient		0.080		Phi Coefficient		0.097	
Contingency Coefficient		0.080		Contingency Coefficient		0.096	
Cramer's V		0.080		Cramer's V		0.097	
Effective Sample Size = 420				Effective Sample Size = 419			
Frequency Missing = 32				Frequency Missing = 33			

The Mantel-Haenszel chi-square statistics show there is no association with ever had a mammogram or had a mammogram in the past 2yrs and value placed on Mexican culture. (p=0.891 and p=0.284).

d. Mammographic use increases with positive attitudes toward family structure.

FAMSEX      MAM_EVER				FAMSEX      MAM_2YRS			
Frequency			Total	Frequency			Total
Row Pct	1	2		Row Pct	1	2	
1	131 76.16	41 23.84	172	1	93 54.39	78 45.61	171
2	120 82.19	26 17.81	146	2	79 54.11	67 45.89	146
3	99 83.90	19 16.10	118	3	75 63.56	43 36.44	118
4	13 81.25	3 18.75	16	4	8 50.00	8 50.00	16
Total	363	89	452	Total	255	196	451
STATISTICS FOR TABLE OF FAMSEX BY MAM_EVER				STATISTICS FOR TABLE OF FAMSEX BY MAM_2YRS			
Statistic	DF	Value	Prob	Statistic	DF	Value	Prob
Chi-Square	3	3.167	0.367	Chi-Square	3	3.318	0.345
Likelihood Ratio Chi-Square	3	3.136	0.371	Likelihood Ratio Chi-Square	3	3.352	0.340
Mantel-Haenszel Chi-Square	1	2.434	0.119	Mantel-Haenszel Chi-Square	1	1.125	0.289
Phi Coefficient		0.084		Phi Coefficient		0.086	
Contingency Coefficient		0.083		Contingency Coefficient		0.085	
Cramer's V		0.084		Cramer's V		0.086	
Sample Size = 452				Effective Sample Size = 451 Frequency Missing = 1			

The Mantel-Haenszel chi-square statistics show there is no association with ever had a mammogram or had a mammogram in the past 2yrs and attitudes toward traditional family structure. ( $p=0.119$  and  $p=0.289$ ).

e. Mammographic use increases with childhood interaction with members of mainstream society.

CHILDINT MAM_EVER				CHILDINT MAM_2YRS			
Frequency Row Pct	1	2	Total	Frequency Row Pct	1	2	Total
1	193 78.14	54 21.86	247	1	131 53.25	115 46.75	246
2	61 83.56	12 16.44	73	2	42 57.53	31 42.47	73
3	64 84.21	12 15.79	76	3	50 65.79	26 34.21	76
4	36 81.82	8 18.18	44	4	24 54.55	20 45.45	44
Total	354	86	440	Total	247	192	439
Frequency Missing = 12				Frequency Missing = 13			
STATISTICS FOR TABLE OF CHILDINT BY MAM_EVER				STATISTICS FOR TABLE OF CHILDINT BY MAM_2YRS			
Statistic	DF	Value	Prob	Statistic	DF	Value	Prob
Chi-Square	3	2.025	0.567	Chi-Square	3	3.810	0.283
Likelihood Ratio Chi-Square	3	2.059	0.560	Likelihood Ratio Chi-Square	3	3.871	0.276
Mantel-Haenszel Chi-Square	1	1.255	0.263	Mantel-Haenszel Chi-Square	1	1.450	0.229
Phi Coefficient		0.068		Phi Coefficient		0.093	
Contingency Coefficient		0.068		Contingency Coefficient		0.093	
Cramer's V		0.068		Cramer's V		0.093	
Effective Sample Size = 440				Effective Sample Size = 439			
Frequency Missing = 12				Frequency Missing = 13			

The Mantel-Haenszel chi-square statistics show there is no association with ever had a mammogram or had a mammogram in the past 2yrs and childhood interaction with members of mainstream society. ( $p=0.263$  and  $p=0.229$ ).

f. Mammographic use increases with adult interaction with members of mainstream society.

ADULTINT MAM_EVER				ADULTINT MAM_2YRS			
Frequency Row Pct	1	2	Total	Frequency Row Pct	1	2	Total
1	73 67.59	35 32.41	108	1	48 44.86	59 55.14	107
2	61 82.43	13 17.57	74	2	45 60.81	29 39.19	74
3	118 84.29	22 15.71	140	3	88 62.86	52 37.14	140
4	99 86.09	16 13.91	115	4	65 56.52	50 43.48	115
Total	351	86	437	Total	246	190	436
Frequency Missing = 15				Frequency Missing = 16			
STATISTICS FOR TABLE OF ADULTINT BY MAM_EVER				STATISTICS FOR TABLE OF ADULTINT BY MAM_2YRS			
Statistic	DF	Value	Prob	Statistic	DF	Value	Prob
Chi-Square	3	15.089	0.002	Chi-Square	3	8.756	0.033
Likelihood Ratio Chi-Square	3	14.046	0.003	Likelihood Ratio Chi-Square	3	8.731	0.033
Mantel-Haenszel Chi-Square	1	12.147	0.001	Mantel-Haenszel Chi-Square	1	3.456	0.063
Phi Coefficient		0.186		Phi Coefficient		0.142	
Contingency Coefficient		0.183		Contingency Coefficient		0.140	
Cramer's V		0.186		Cramer's V		0.142	
Effective Sample Size = 437				Effective Sample Size = 436			
Frequency Missing = 15				Frequency Missing = 16			

The Mantel-Haenszel chi-square statistics show there is an association with ever had a mammogram or had a mammogram in the past 2yrs and adult interaction with members of mainstream society. ( $p=0.001$  and  $p=0.063$ ).

Increases with high level of **acculturation**. (Hazuda's scale of composite score of acculturation )

Composite score      Ever had a mammogram				Composite score      Had a mammogram in past 2yrs.			
Frequency			Total	Frequency			Total
Row Pct	1	2		Row Pct	1	2	
(Low) 1	43 62.32	26 37.68	69	1	28 41.18	40 58.82	68
2	96 84.21	18 15.79	114	2	67 58.77	47 41.23	114
3	163 83.59	32 16.41	195	3	114 58.46	81 41.54	195
(High) 4	60 83.33	12 16.67	72	4	45 62.50	27 37.50	72
Total	362	88	450	Total	254	195	449
Frequency Missing = 2				Frequency Missing = 3			
STATISTICS FOR TABLE OF COMPOSITE SCORE BY EVER HAD A MAMMOGRAM				STATISTICS FOR TABLE OF COMPOSITE SCORE BY HAD A MAMMOGRAM IN PAST 2YRS.			
Statistic	DF	Value	Prob	Statistic	DF	Value	Prob
Chi-Square	3	17.046	0.001	Chi-Square	3	8.098	0.044
Likelihood Ratio Chi-Square	3	14.913	0.002	Likelihood Ratio Chi-Square	3	8.040	0.045
Mantel-Haenszel Chi-Square	1	8.454	0.004	Mantel-Haenszel Chi-Square	1	5.399	0.020
Phi Coefficient		0.195		Phi Coefficient		0.134	
Contingency Coefficient		0.191		Contingency Coefficient		0.133	
Cramer's V		0.195		Cramer's V		0.134	
Effective Sample Size = 450				Effective Sample Size = 449			
Frequency Missing = 2				Frequency Missing = 3			

The Mantel-Haenszwl chi- Square statistics show that there is an association between level of acculturation and ever had a mammogram and had mammogram in past 2yrs. (  $p=0.004$  &  $p=0.020$  ).

**Hypothesis 3. Strong social support related to the family is associated with increased likelihood of ever having mammogram and, among those who had a mammogram, of having had a mammogram in the last 2 years.**

a. Increases with **strength of family networks** (number and frequency of contacts)

1. Question asked : How many people live in the household?

No. of people      MAM_EVER				No. of People      MAM_2YRS			
Frequency Row Pct	1	2	Total	Frequency Row Pct	1	2	Total
1 or 2	195 84.05	37 15.95	232	1 or 2	143 61.64	89 38.36	232
3 or 4	121 82.88	25 17.12	146	3 or 4	82 56.55	63 43.45	145
5 or more	47 63.51	27 36.49	74	5 or more	30 40.54	44 59.46	74
Total	363	89	452	Total	255	196	451
STATISTICS FOR TABLE OF PEOPLE BY MAM_EVER				STATISTICS FOR TABLE OF PEOPLE BY MAM_2YRS			
Statistic	DF	Value	Prob	Statistic	DF	Value	Prob
Chi-Square	2	15.865	0.001	Chi-Square	2	10.163	0.006
Likelihood Ratio Chi-Square	2	14.046	0.001	Likelihood Ratio Chi-Square	2	10.106	0.006
Mantel-Haenszel Chi-Square	1	11.214	0.001	Mantel-Haenszel Chi-Square	1	9.073	0.003
Phi Coefficient		0.187		Phi Coefficient		0.150	
Contingency Coefficient		0.184		Contingency Coefficient		0.148	
Cramer's V		0.187		Cramer's V		0.150	
Sample Size = 452				Effective Sample Size = 451 Frequency Missing = 1			

The Mantel-Haenszel chi-square statistics shows that there is an association between ever had a mammogram or had mammogram to no. of people staying in the household. ( $p=0.001$  &  $p=0.003$ ) . The mammographic use decreases with no. of people staying in the household.

## 2. Question asked: How many living sons do you have?

SON MAM_EVER				SON MAM_2YRS			
Frequency			Total	Frequency			Total
Row Pct	1	2		Row Pct	1	2	
None	44	9	53	None	32	21	53
	83.02	16.98			60.38	39.62	
1 or 2	181	48	229	1 or 2	131	98	229
	79.04	20.96			57.21	42.79	
3 or 4	97	18	115	3 or 4	67	48	115
	84.35	15.65			58.26	41.74	
5 or more	41	14	55	5 or more	25	29	54
	74.55	25.45			46.30	53.70	
Total	363	89	452	Total	255	196	451
STATISTICS FOR TABLE OF SON BY MAM_EVER				Frequency Missing = 1			
Statistic	DF	Value	Prob	STATISTICS FOR TABLE OF SON BY MAM_2YRS			
Chi-Square	3	2.821	0.420	Statistic	DF	Value	Prob
Likelihood Ratio Chi-Square	3	2.822	0.420	Chi-Square	3	2.803	0.423
Mantel-Haenszel Chi-Square	1	0.062	0.804	Likelihood Ratio Chi-Square	3	2.781	0.427
Phi Coefficient		0.079		Mantel-Haenszel Chi-Square	1	1.161	0.281
Contingency Coefficient		0.079		Phi Coefficient		0.079	
Cramer's V		0.079		Contingency Coefficient		0.079	
Sample Size = 452				Cramer's V		0.079	
				Effective Sample Size = 451			
				Frequency Missing = 1			

The Mantel-Haenszel chi-square statistics shows that there is no association between ever had a mammogram or had mammogram to the no. of living sons one has. ( $p=0.804$  &  $p=0.281$ ).

### 3.Question asked: How many sons have you seen in the last month?

SON MAM_EVER				SON MAM_2YRS			
Frequency Row Pct	1	2	Total	Frequency Row Pct	1	2	Total
None	17 68.00	8 32.00	25	None	11 44.00	14 56.00	25
1 or 2	189 80.08	47 19.92	236	1 or 2	139 59.15	96 40.85	235
3 or 4	88 83.02	18 16.98	106	3 or 4	59 55.66	47 44.34	106
5 or more	25 80.65	6 19.35	31	5 or more	14 45.16	17 54.84	31
Total	319	79	398	Total	223	174	397
Frequency Missing = 54				Frequency Missing = 55			
STATISTICS FOR TABLE OF SON BY MAM_EVER				STATISTICS FOR TABLE OF SON BY MAM_2YRS			
Statistic	DF	Value	Prob	Statistic	DF	Value	Prob
Chi-Square	3	2.874	0.412	Chi-Square	3	3.888	0.274
Likelihood Ratio Chi-Square	3	2.627	0.453	Likelihood Ratio Chi-Square	3	3.862	0.277
Mantel-Haenszel Chi-Square	1	0.846	0.358	Mantel-Haenszel Chi-Square	1	0.790	0.374
Phi Coefficient		0.085		Phi Coefficient		0.099	
Contingency Coefficient		0.085		Contingency Coefficient		0.098	
Cramer's V		0.085		Cramer's V		0.099	
Effective Sample Size = 398				Effective Sample Size = 397			
Frequency Missing = 54				Frequency Missing = 55			
WARNING: 12% of the data are missing.				WARNING: 12% of the data are missing.			

The Mantel-Haenszel chi-square statistics show that there is no association between ever had a mammogram or had mammogram to no. of sons one has seen in the last month. ( $p=0.358$  &  $p=0.374$ ).

(missing value includes the number of women who do not have any sons.)

4. Question asked: How many sons have you talked to by phone in the last month?

SON MAM_EVER				SON MAM_2YRS			
Frequency			Total	Frequency			Total
Row Pct	1	2		Row Pct	1	2	
None	13 59.09	9 40.91	22	None	8 38.10	13 61.90	21
1 or 2	193 80.08	48 19.92	241	1 or 2	141 58.51	100 41.49	241
3 or 4	86 84.31	16 15.69	102	3 or 4	60 58.82	42 41.18	102
5 or more	27 81.82	6 18.18	33	5 or more	14 42.42	19 57.58	33
Total	319	79	398	Total	223	174	397
Frequency Missing = 54				Frequency Missing = 55			
STATISTICS FOR TABLE OF SON BY MAM_EVER				STATISTICS FOR TABLE OF SON BY MAM_2YRS			
Statistic	DF	Value	Prob	Statistic	DF	Value	Prob
Chi-Square	3	7.303	0.063	Chi-Square	3	6.145	0.105
Likelihood Ratio Chi-Square	3	6.328	0.097	Likelihood Ratio Chi-Square	3	6.101	0.107
Mantel-Haenszel Chi-Square	1	2.074	0.150	Mantel-Haenszel Chi-Square	1	0.458	0.499
Phi Coefficient		0.135		Phi Coefficient		0.124	
Contingency Coefficient		0.134		Contingency Coefficient		0.123	
Cramer's V		0.135		Cramer's V		0.124	
Effective Sample Size = 398				Effective Sample Size = 397			
Frequency Missing = 54				Frequency Missing = 55			
WARNING: 12% of the data are missing.				WARNING: 12% of the data are missing.			

The Mantel-Haenszel chi-square statistics show that there is no association between ever had a mammogram or had mammogram to number of sons one has talked to in the last month.

( $p=0.150$  &  $p=0.499$ ).

(missing value includes the number of women who do not have any sons.)

## 5. How many living daughters you have?

DAUGHTER MAM_EVER				DAUGHTER MAM_2YRS			
Frequency	1	2	Total	Frequency	1	2	Total
Row Pct				Row Pct			
0	44 88.00	6 12.00	50	0	32 64.00	18 36.00	50
1	88 82.24	19 17.76	107	1	64 59.81	43 40.19	107
2	102 82.26	22 17.74	124	2	66 53.66	57 46.34	123
3	127 76.05	40 23.95	167	3	92 55.09	75 44.91	167
Total	361	87	448	Total	254	193	447
Frequency Missing = 4				Frequency Missing = 5			
STATISTICS FOR TABLE OF DAUGHT BY MAM_EVER				STATISTICS FOR TABLE OF DAUGHT BY MAM_2YRS			
Statistic	DF	Value	Prob	Statistic	DF	Value	Prob
Chi-Square	3	4.363	0.225	Chi-Square	3	2.146	0.543
Likelihood Ratio Chi-Square	3	4.473	0.215	Likelihood Ratio Chi-Square	3	2.164	0.539
Mantel-Haenszel Chi-Square	1	3.811	0.051	Mantel-Haenszel Chi-Square	1	1.522	0.217
Phi Coefficient		0.099		Phi Coefficient		0.069	
Contingency Coefficient		0.098		Contingency Coefficient		0.069	
Cramer's V		0.099		Cramer's V		0.069	
Effective Sample Size = 448				Effective Sample Size = 447			
Frequency Missing = 4				Frequency Missing = 5			

The Mantel-Haenszel chi-square statistics shows that there is an association between ever had a mammogram to the number of living daughters one has. ( $p=0.051$ ). Mammographic use decreases with number of daughters.

6. Question asked: How many daughters have you seen in the last month?

DAUGHT		MAM_EVER		
Frequency				
Row Pct	1	2	Total	
0	21 75.00	7 25.00	28	
1	96 81.36	22 18.64	118	
2	105 83.33	21 16.67	126	
3 or more	94 75.20	31 24.80	125	
Total	316	81	397	
Frequency Missing = 55				
STATISTICS FOR TABLE OF DAUGHT BY MAM_EVER				
Statistic	DF	Value	Prob	
Chi-Square	3	3.160	0.368	
Likelihood Ratio Chi-Square	3	3.131	0.372	
Mantel-Haenszel Chi-Square	1	0.440	0.507	
Phi Coefficient		0.089		
Contingency Coefficient		0.089		
Cramer's V		0.089		
Effective Sample Size = 397				
Frequency Missing = 55				
WARNING: 12% of the data are missing.				

DAUGHT		MAM_2YRS		
Frequency				
Row Pct	1	2	Total	
0	15 53.57	13 46.43	28	
1	69 58.47	49 41.53	118	
2	73 58.40	52 41.60	125	
3 or more	64 51.20	61 48.80	125	
Total	221	175	396	
Frequency Missing = 56				
STATISTICS FOR TABLE OF DAUGHT BY MAM_2YRS				
Statistic	DF	Value	Prob	
Chi-Square	3	1.814	0.612	
Likelihood Ratio Chi-Square	3	1.811	0.613	
Mantel-Haenszel Chi-Square	1	0.679	0.410	
Phi Coefficient		0.068		
Contingency Coefficient		0.068		
Cramer's V		0.068		
Effective Sample Size = 396				
Frequency Missing = 56				
WARNING: 12% of the data are missing.				

The Mantel-Haenszel chi-square statistics shows that there is no association between ever had a mammogram or had mammogram to the number of daughters one has seen in the last month.

( $p=0.507$  &  $p=0.410$ )

(missing value includes the number of women who do not have any daughters.)

# 7. How many daughters have you talked on phone in the past month?

DAUGHT MAM_EVER				DAUGHT MAM_2YRS			
Frequency	1	2	Total	Frequency	1	2	Total
Row Pct				Row Pct			
0	9 52.94	8 47.06	17	0	5 31.25	11 68.75	16
1	91 82.73	19 17.27	110	1	66 60.00	44 40.00	110
2	109 81.95	24 18.05	133	2	74 55.64	59 44.36	133
3 or more	106 77.94	30 22.06	136	3 or more	75 55.15	61 44.85	136
Total	315	81	396	Total	220	175	395
Frequency Missing = 56				Frequency Missing = 57			
STATISTICS FOR TABLE OF DAUGHT BY MAM_EVER				STATISTICS FOR TABLE OF DAUGHT BY MAM_2YRS			
Statistic	DF	Value	Prob	Statistic	DF	Value	Prob
Chi-Square	3	8.769	0.033	Chi-Square	3	4.718	0.194
Likelihood Ratio Chi-Square	3	7.416	0.060	Likelihood Ratio Chi-Square	3	4.737	0.192
Mantel-Haenszel Chi-Square	1	0.221	0.638	Mantel-Haenszel Chi-Square	1	0.072	0.789
Phi Coefficient		0.149		Phi Coefficient		0.109	
Contingency Coefficient		0.147		Contingency Coefficient		0.109	
Cramer's V		0.149		Cramer's V		0.109	
Effective Sample Size = 396				Effective Sample Size = 395			
Frequency Missing = 56				Frequency Missing = 57			
WARNING: 12% of the data are missing.				WARNING: 13% of the data are missing.			

The Mantel-Haenszel chi-square statistics show that there is no association between ever had a mammogram to the number of daughters one has talked in the last month. (p=0.638)

There is no association between had mammogram in the past 2yrs and the number of daughters one has talked in the past month. ( p=0.789) .

( missing value includes the number of women who do not have any daughters.)

However, it appears that women who didn't talk to their daughters in the last month were less likely to have ever had a mammogram or had one in past 2 years.

b. Increases with **Marital Satisfaction**

MARITAL SCORE				MARITAL SCORE			
MAM_EVER				MAM_2YRS			
Frequency	1	2	Total	Frequency	1	2	Total
Row Pct				Row Pct			
1	38	14	52	1	26	26	52
	73.08	26.92			50.00	50.00	
2	42	13	55	2	27	28	55
	76.36	23.64			49.09	50.91	
3	58	6	64	3	43	20	63
	90.63	9.38			68.25	31.75	
4	52	13	65	4	37	28	65
	80.00	20.00			56.92	43.08	
5	46	6	52	5	34	18	52
	88.46	11.54			65.38	34.62	
Total	236	52	288	Total	167	120	287
Frequency Missing = 164				Frequency Missing = 165			
STATISTICS FOR TABLE OF MARITAL SCORE BY MAM_EVER				STATISTICS FOR TABLE OF MARITAL SCORE BY MAM_2YRS			
Statistic	DF	Value	Prob	Statistic	DF	Value	Prob
Chi-Square	4	8.840	0.065	Chi-Square	4	7.077	0.132
Likelihood Ratio Chi-Square	4	9.204	0.056	Likelihood Ratio Chi-Square	4	7.135	0.129
Mantel-Haenszel Chi-Square	1	3.986	0.046	Mantel-Haenszel Chi-Square	1	3.114	0.078
Phi Coefficient		0.175		Phi Coefficient		0.157	
Contingency Coefficient		0.173		Contingency Coefficient		0.155	
Cramer's V		0.175		Cramer's V		0.157	
Effective Sample Size = 288				Effective Sample Size = 287			
Frequency Missing = 164				Frequency Missing = 165			
WARNING: 36% of the data are missing.				WARNING: 37% of the data are missing.			

The Mantel-Haenszel chi square statistics indicate the marital satisfaction is significantly associated with ever had a mammogram and having had a mammogram in the past two years. (p=0.046 & p=0.078).

c. Increases with **affectual solidarity**.

Question asked: Generally, how well do you and younger female relative get along together?

L5(L5) MAM_EVER				L5(L5) MAM_2YRS			
Frequency Row Pct	1	2	Total	Frequency Row Pct	1	2	Total
Extremely well	92 81.42	21 18.58	113	Extremely well	73 64.60	40 35.40	113
very well	84 83.17	17 16.83	101	Very well	56 55.45	45 44.55	101
pretty well	26 74.29	9 25.71	35	pretty well	20 57.14	15 42.86	35
Somewhat well	10 83.33	2 16.67	12	Somewhat well	7 63.64	4 36.36	11
not well	1 100.00	0 0.00	1	not well	0 0.00	1 100.00	1
Total	213	49	262	Total	156	105	261
Frequency Missing = 190				Frequency Missing = 191			
STATISTICS FOR TABLE OF L5 BY MAM_EVER				STATISTICS FOR TABLE OF L5 BY MAM_2YRS			
Statistic	DF	Value	Prob	Statistic	DF	Value	Prob
Chi-Square	4	1.628		Chi-Square	4	3.537	
0.804				0.472			
Likelihood Ratio Chi-Square	4	1.728		Likelihood Ratio Chi-Square	4	3.881	
0.786				0.422			
Mantel-Haenszel Chi-Square	1	0.059		Mantel-Haenszel Chi-Square	1	1.315	
0.808				0.252			
Phi Coefficient		0.079		Phi Coefficient		0.116	
Contingency Coefficient		0.079		Contingency Coefficient		0.116	
Cramer's V		0.079		Cramer's V		0.116	
Effective Sample Size = 262				Effective Sample Size = 261			
Frequency Missing = 190				Frequency Missing = 191			
WARNING: 42% of the data are missing.				WARNING: 42% of the data are missing.			
WARNING: 30% of the cells have expected counts less than 5. Chi-Square may not be a valid test.				WARNING: 30% of the cells have expected counts less than 5. Chi-Square may not be a valid test.			

Since the chi square test may not be valid, Fisher's Exact test was performed. The results were not significant ( $p=.746$  for ever had a mammogram and  $p=.475$  for having a mammogram in the past 2 years).

- d. How likely would you be to go for a mammogram if the younger female relative suggested you get one?

L14A(L14A) MAM_EVER				L14A(L14A) MAM_2YRS			
Frequency Row Pct	1	2	Total	Frequency Row Pct	1	2	Total
very likely	142 89.31	17 10.69	159	very likely	99 62.66	59 37.34	158
somewhat likely	63 75.90	20 24.10	83	somewhat likely	48 57.83	35 42.17	83
not very likely	25 73.53	9 26.47	34	not very likely	21 61.76	13 38.24	34
not at all likely	16 57.14	12 42.86	28	not at all likely	10 35.71	18 64.29	28
Total	246	58	304	Total	178	125	303
Frequency Missing = 148				Frequency Missing = 149			
STATISTICS FOR TABLE OF L14A BY MAM_EVER				STATISTICS FOR TABLE OF L14A BY MAM_2YRS			
Statistic	DF	Value	Prob	Statistic	DF	Value	Prob
Chi-Square	3	20.055	0.001	Chi-Square	3	7.283	0.063
Likelihood Ratio Chi-Square	3	18.986	0.001	Likelihood Ratio Chi-Square	3	7.182	0.066
Mantel-Haenszel Chi-Square	1	18.978	0.001	Mantel-Haenszel Chi-Square	1	4.642	0.031
Phi Coefficient		0.257		Phi Coefficient		0.155	
Contingency Coefficient		0.249		Contingency Coefficient		0.153	
Cramer's V		0.257		Cramer's V		0.155	
Effective Sample Size = 304				Effective Sample Size = 303			
Frequency Missing = 148				Frequency Missing = 149			
WARNING: 33% of the data are missing.				WARNING: 33% of the data are missing.			

There is an association between ever had a mammogram or had a mammogram in the past 2yrs to the advice of the younger female relative. ( $p=0.001$  &  $p=0.031$ ). Moreover, among those who never had a mammogram 64% would be likely to get one on advice of the younger female relative. Among those who have not had one in the past 2 years, 75% would be likely to get one.

j. Question asked: How likely would you be to go for a mammogram if your husband suggested you to get one?

E17C(E17c) MAM_EVER				E17C(E17c) MAM_2YRS			
Frequency Row Pct	1	2	Total	Frequency Row Pct	1	2	Total
Very likely	123 91.11	12 8.89	135	Very likely	89 66.42	45 33.58	134
Somewhat likely	58 78.38	16 21.62	74	Somewhat likely	40 54.05	34 45.95	74
Not very likely	24 88.89	3 11.11	27	Not very likely	20 74.07	7 25.93	27
Not at all likely	27 75.00	9 25.00	36	Not at all Likely	15 41.67	21 58.33	36
Total	232	40	272	Total	164	107	271
Frequency Missing = 180				Frequency Missing = 181			
STATISTICS FOR TABLE OF E17C BY MAM_EVER				STATISTICS FOR TABLE OF E17C BY MAM_2YRS			
Statistic	DF	Value	Prob	Statistic	DF	Value	Prob
Chi-Square	3	9.783	0.021	Chi-Square	3	10.677	0.014
Likelihood Ratio Chi-Square	3	9.578	0.023	Likelihood Ratio Chi-Square	3	10.659	0.014
Mantel-Haenszel Chi-Square	1	5.388	0.020	Mantel-Haenszel Chi-Square	1	4.406	0.036
Phi Coefficient		0.190		Phi Coefficient		0.198	
Contingency Coefficient		0.186		Contingency Coefficient		0.195	
Cramer's V		0.190		Cramer's V		0.198	
Effective Sample Size = 272				Effective Sample Size = 271			
Frequency Missing = 180				Frequency Missing = 181			
WARNING: 40% of the data are missing.				WARNING: 40% of the data are missing.			

The Mantel-Haenszel chi-square statistics show there is an association with ever had a mammogram or had mammogram in the past 2yrs and likelihood of having mammogram if husband suggested to get one. ( $p=0.020$  and  $p=0.036$ ).

k. Question asked: How likely would you be to go for a mammogram if any other relative or family member suggested you to get one?

E17D(E17d) MAM_EVER				E17D(E17d) MAM_2YRS			
Frequency Row Pct	1	2	Total	Frequency Row Pct	1	2	Total
Very likely	125 93.28	9 6.72	134	Very Likely	93 69.92	40 30.08	133
somewhat likely	115 80.42	28 19.58	143	somewhat likely	80 55.94	63 44.06	143
Not very likely	60 82.19	13 17.81	73	Not very Likely	42 57.53	31 42.47	73
Not at all likely	60 78.95	16 21.05	76	Not at all Likely	38 50.00	38 50.00	76
Total	360	66	426	Total	253	172	425
Frequency Missing = 26				Frequency Missing = 27			
STATISTICS FOR TABLE OF E17D BY MAM_EVER				STATISTICS FOR TABLE OF E17D BY MAM_2YRS			
Statistic	DF	Value	Prob	Statistic	DF	Value	Prob
Chi-Square	3	11.802	0.008	Chi-Square	3	9.714	0.021
Likelihood Ratio Chi-Square	3	13.300	0.004	Likelihood Ratio Chi-Square	3	9.875	0.020
Mantel-Haenszel Chi-Square	1	7.436	0.006	Mantel-Haenszel Chi-Square	1	7.487	0.006
Phi Coefficient		0.166		Phi Coefficient		0.151	
Contingency Coefficient		0.164		Contingency Coefficient		0.149	
Cramer's V		0.166		Cramer's V		0.151	
Effective Sample Size = 426				Effective Sample Size = 425			
Frequency Missing = 26				Frequency Missing = 27			

The Mantel-Haenszel chi-square statistics show there is an association with ever had a mammogram or had mammogram in the past 2yrs and likelihood of having mammogram if any family member suggested to get one. ( $p=0.006$  and  $p=0.006$ ).

i. Encouragement from any family member or relative is associated with mammographic use:

Question asked: Have any of your family members ever encouraged you to have a mammogram?

E15(E15) MAM_EVER				E15(E15) MAM_2YRS			
Frequency Row Pct	1	2	Total	Frequency Row Pct	1	2	Total
Yes	106 82.17	23 17.83	129	1	69 53.91	59 46.09	128
No	257 79.57	66 20.43	323	2	186 57.59	137 42.41	323
Total	363	89	452	Total	255	196	451
STATISTICS FOR TABLE OF E15 BY MAM_EVER				STATISTICS FOR TABLE OF E15 BY MAM_2YRS			
Statistic	DF	Value	Prob	Statistic	DF	Value	Prob
Chi-Square	1	0.395	0.530	Chi-Square	1	0.505	0.477
Likelihood Ratio Chi-Square	1	0.401	0.526	Likelihood Ratio Chi-Square	1	0.504	0.478
Continuity Adj. Chi-Square	1	0.248	0.619	Continuity Adj. Chi-Square	1	0.366	0.545
Mantel-Haenszel Chi-Square	1	0.394	0.530	Mantel-Haenszel Chi-Square	1	0.504	0.478
Phi Coefficient		0.030		Phi Coefficient		-0.033	
Contingency Coefficient		0.030		Contingency Coefficient		0.033	
Cramer's V		0.030		Cramer's V		-0.033	
Sample Size = 452				Effective Sample Size = 451 Frequency Missing = 1			

The Mantel-Haenszel chi-square statistics show there is no association with ever had a mammogram or had mammogram in the past 2yrs and encouragement from any family member or relative. ( $p=0.530$  and  $p=0.478$ ).